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A BIBLIOGRAPHY OF EXPERIMENTAL SATURATION  
PROPERTIES OF THE CRYOGENIC FLUIDS

N. A. Olien and L. A. Hall



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U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS

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# NATIONAL BUREAU OF STANDARDS

## *Technical Note 309*

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### A BIBLIOGRAPHY OF EXPERIMENTAL SATURATION PROPERTIES OF THE CRYOGENIC FLUIDS

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A BIBLIOGRAPHY OF EXPERIMENTAL SATURATION  
PROPERTIES OF THE CRYOGENIC FLUIDS<sup>1</sup>

N. A. Olien and L. A. Hall

A bibliography of 507 references to experimental work is presented for the properties of the cryogenic fluids in the solid, liquid, and vapor phases at saturation. The cryogenic fluids included are helium, hydrogen, neon, nitrogen, oxygen, air, carbon monoxide, fluorine, argon, methane, and isotopes of helium, hydrogen, and methane. Each article has been reviewed and coded for properties, method of presentation of the data, and temperature range. An index lists each fluid in five categories: solid-solid transition, solid-liquid transition, solid-vapor transition, liquid-vapor transition, and triple point. For helium the liquid-liquid transition is also included. Each category is indexed by the properties: pressure-temperature data, density and heat capacity of all phases at saturation, and latent heats.

1. INTRODUCTION

The mission of the Data Compilation Unit of the Cryogenic Data Center is the critical evaluation of quantitative information from the world's literature related to the thermophysical properties of materials at cryogenic temperatures. The determination of the saturation boundaries is a primary consideration in the compilation of the properties of cryogenic fluids, and in the determination of physical equilibria properties of fluid mixtures. The Documentation Unit of the Cryogenic Data Center has in its mission the review of the world's literature for selection of pertinent material to be included in an information storage and retrieval system; this review is presently concentrated on the properties of solids and fluids at cryogenic temperatures. This bibliography is the result of a joint effort of the Data Compilation and Documentation Units.

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<sup>1</sup> This bibliography is a result of a study made under contract with the National Aeronautics and Space Administration.



## 2. METHOD OF LITERATURE SEARCH

The literature search for this bibliography was started in May 1962. The initial search was of an existing file of literature maintained by the Data Compilation Unit which includes the subject area of this bibliography. The existing file was derived from the literature collected in the preparation of the "Compendium"<sup>2</sup>. The literature file of the Data Compilation Unit on the properties of fluids and solids from ambient to cryogenic temperatures has grown in size from approximately 1000 selected documents in 1962 to over 4000 selected documents at the time of this report. This file is particularly appropriate for collecting information on the subject of this bibliography since there have been continuing searches for literature reporting the properties of helium, hydrogen, neon, nitrogen, oxygen, air, carbon monoxide, fluorine, argon, and methane. The search for literature pertinent to this bibliography was conducted as follows:

- 1) each article in the file was examined in detail for any saturation property information,
- 2) all articles containing original information were noted for inclusion in the bibliography,
- 3) all references to saturation properties in the literature reviewed were noted and copies obtained,
- 4) all new material routinely entering the file was reviewed in a like manner. (The growth of the total literature file during the period of the search was approximately 100 new items per month.)

The search of the existing literature file yielded 204 references to original data. An additional 457 references were noted in reviewing the citations listed in the documents on file. These additional references were acquired and 215 were found to contain original data for saturation properties. Surveillance of the new literature entering the Cryogenic Data Center's bibliographic system during the period of this study yielded another 72 pertinent references.

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<sup>2</sup> "A Compendium of the Properties of Materials at Low Temperature (Phase I.) Part I. Properties of Fluids", V. J. Johnson, Editor, Wright Air Development Division Tech. Rept. 60-56 (1960) 560 p.



The type of search program used for this bibliography could be described as retrospective search by means of citations from a set of relevant documents. This method represents a departure from the usual search of abstracting journals and indexing services. Although citation searching is not new, there is a dearth of literature justifying its use in bibliography preparation. The search strategy used here is a partial adaptation of the method, formulated by Cezairliyan, et al.<sup>3,4</sup> and Lykoudis, et al.<sup>5</sup> and the citation index developed by Garfield<sup>6,7,8,9</sup>. Since this search strategy is not fully documented, to insure comprehensiveness, further searching was necessary. Therefore, Chemical Abstracts were searched for the properties involved from volumes 21 through 57 (1925 through 1962). As a result 53 new articles were found of which 16 were determined to have original data and were entered into the bibliography.

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- <sup>3</sup> "Analytical and Experimental Study of a Method for Literature Search in Abstracting Journals", A. O. Cezairliyan, P. S. Lykoudis, and Y. S. Touloukian, Thermophysical Properties Research Center Rept. No. 11 (Dec 1960).
- <sup>4</sup> "A New Method for the Search of Scientific Literature through Abstracting Journals", A. O. Cezairliyan, P. S. Lykoudis, and Y. S. Touloukian, J. Chem. Doc. 2, No. 2, 86-92 (1962).
- <sup>5</sup> "Analytical Study of a Method for Literature Search in Abstracting Journals", P. S. Lykoudis, P. E. Liley, and Y. S. Touloukian, Thermophysical Properties Research Center Publ. No. 2, Purdue Univ., Lafayette, Ind. (1958).
- <sup>6</sup> "Citation Indexes for Science", E. Garfield, Science 122, 108-111 (1955).
- <sup>7</sup> "New Factors in the Evaluation of Scientific Literature through Citation Indexing", E. Garfield, and I. H. Sher, Am. Doc. 14, 195-201 (Jul 1963).
- <sup>8</sup> "Citation Indexes in Sociological and Historical Research", E. Garfield, Am. Doc. 14, 289-91 (Oct 1963).
- <sup>9</sup> "Science Citation Index - A New Dimension in Indexing", E. Garfield, Science 144, 649-54 (May 1964).

### 3. FORMAT FOR LISTING CITATION AND DOCUMENT CONTENTS

The citations have been arranged alphabetically by first author and numbered sequentially. Only information from the article which concerns the saturation properties of the cryogenic fluids is noted in the bibliography.

The information given for each citation includes the following in the order listed:

1. Author(s)
2. Title (original language, except other than Roman alphabet) and translated title, if original is in a language other than English
3. Reference (if the same article has been published in more than one place, each reference is cited)
4. Cryogenic fluid(s) involved followed by the properties reported and the temperature range covered
5. Form in which data is reported, i.e., tabular, graphical, and equations
6. Original language, if other than English.

### 4. FORMAT OF PROPERTY INDEX

The primary divisions of the index are the cryogenic fluids. For each fluid the references are indexed by the following phase transitions: 1) solid-solid transition, 2) solid-liquid transition, 3) solid-vapor transition, 4) liquid-vapor transition, and 5) triple point. For helium the liquid-liquid or lambda transition is also included. Each of the phase transitions is further divided by the properties: 1) pressure-temperature data, 2) density (both phases), 3) latent heat of transition, and 4) heat capacity (both phases). Property headings for which no references were found were omitted.

## 5. PROPERTY INDEX LOCATION FOR THE CRYOGENIC FLUIDS

	Page No.
1. Helium	
a. helium-3	6
b. helium-4 (includes articles in which authors did not specify the isotope studied)	7
2. Hydrogen	
a. 20.4°K equilibrium hydrogen (includes parahydrogen)	8
b. normal hydrogen (includes articles in which authors did not specify the ortho-para composition)	9
c. ortho-parahydrogen (other than normal)	9
d. hydrogen deuteride	10
e. deuterium	11
f. hydrogen tritide and deuterium tritide	12
g. tritium	12
3. Neon	13
4. Nitrogen	14
5. Oxygen	15
6. Air	16
7. Carbon Monoxide	17
8. Fluorine	18
9. Argon	19
10. Methane	
a. normal methane	20
b. deuteromethane and other isotopic modifications	21

## 6. INDEX OF PROPERTIES

## HELIUM-3

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA  
187 217

DENSITY  
420

HEAT OF TRANSITION  
187

## SOLID-LIQUID TRANSITION

MELTING PRESSURE  
18 20 43 44 162  
217 219 224 358 360  
362 396 397 416 421  
428 429 489

DENSITY-SOLID  
219 360 362 421 462

DENSITY-LIQUID  
162 217 219 360 362  
428 429 462

HEAT CAPACITY-SOLID  
18 225 226 348 416

HEAT CAPACITY-LIQUID  
348 416 452

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE  
507

HEAT CAPACITY-SOLID  
163 224

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE  
1 395 442 461 463  
464

DENSITY-LIQUID  
215 297 300 320 405  
428 429 465

DENSITY-VAPOR  
215 297

HEAT OF VAPORIZATION  
3 4

HEAT CAPACITY-LIQUID  
2 19 43 68 69  
70 139 140 398 399  
406 407 416 443 453  
454 455

## LIQUID-LIQUID TRANSITION

PRESSURE-TEMPERATURE DATA  
400

## INDEX OF PROPERTIES (CONT.)

## HELIUM-4 (OR UNSPECIFIED HELIUM)

REFERENCES NOT INDEXED FOR PHASE  
TRANSITION OR PROPERTY  
408

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

14	15	16	50	170
292	293	307	330	378
379	380	381	393	418
419	478	499		

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA  
8 218 483

DENSITY  
218 304 363

## DENSITY-LIQUID

21	165	166	298	301
344	379	381		

## DENSITY-VAPOR

166	344	379		
-----	-----	-----	--	--

## SOLID-LIQUID TRANSITION

## MELTING PRESSURE

8	75	131	158	171
217	218	245	246	269
280	321	322	358	361
396	421	433	434	437
457	458	459	483	

## HEAT OF VAPORIZATION

48	49	133		
----	----	-----	--	--

## HEAT CAPACITY-LIQUID

134	156	179	232	238
250	274	279	281	294
295	313	314	333	334
337	338	497		

## DENSITY-SOLID

158	218	264	270	282
304	360	361	421	437
457	458	459		

## LIQUID-LIQUID TRANSITION

## PRESSURE-TEMPERATURE DATA

8	135	161	273	281
295	321	332	333	335
419	458			

## DENSITY-LIQUID

75	158	162	217	218
270	282	304	360	361
437	457	458	459	

## DENSITY

85	301	332		
----	-----	-----	--	--

## HEAT OF FUSION

264	270	282	433	437
-----	-----	-----	-----	-----

## HEAT CAPACITY

279	281	331	333	
-----	-----	-----	-----	--

## HEAT CAPACITY-SOLID

158	226	270	282	
-----	-----	-----	-----	--

## HEAT CAPACITY-LIQUID

270	282	333		
-----	-----	-----	--	--

## SOLID-VAPOR TRANSITION

## VAPOR PRESSURE

319				
-----	--	--	--	--

## DENSITY-SOLID

290				
-----	--	--	--	--

## HEAT CAPACITY-SOLID

5				
---	--	--	--	--

## INDEX OF PROPERTIES (CONT.)

## 20.4 DEGREE K. EQUILIBRIUM HYDROGEN (INCLUDES PARAHYDROGEN)

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

MELTING PRESSURE

6 118 208

DENSITY-SOLID

6 118

DENSITY-LIQUID

208

HEAT OF FUSION

6 7 103 118 258

HEAT CAPACITY-SOLID

7 103

HEAT CAPACITY-LIQUID

103

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE

439

DENSITY-SOLID

276

HEAT CAPACITY-SOLID

6 239 258 351

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE

31 39 62 205 206

207 243 244 272 410

477 488

DENSITY-LIQUID

31 206 244 309 410

423

DENSITY-VAPOR

31 244 410

HEAT OF VAPORIZATION

258 495

HEAT CAPACITY-LIQUID

258 440 505

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA

39 62 103 258



## INDEX OF PROPERTIES (CONT.)

## NORMAL HYDROGEN (OR UNSPECIFIED HYDROGEN)

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

## MELTING PRESSURE

86	283	284	324	358
359	392	435	469	471

## DENSITY-SOLID

41

## DENSITY-LIQUID

41

## HEAT OF FUSION

289 432

## HEAT CAPACITY-SOLID

42

## SOLID-VAPOR TRANSITION

## VAPOR PRESSURE

64 145 202 222 308

## DENSITY-SOLID

349 350 385

## HEAT CAPACITY-SOLID

289 351 432

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

31	32	57	66	76
83	143	144	146	192
202	212	228	229	230
236	272	324	339	364
365	369	370	374	376
382	388	390	391	424
469	477	491	492	

## DENSITY-LIQUID

35	143	148	206	309
342	385	423		

## DENSITY-VAPOR

342

## HEAT OF VAPORIZATION

149 175 268 424 432

## HEAT CAPACITY-LIQUID

42 175 289 432

## TRIPLE POINT

## PRESSURE-TEMPERATURE DATA

57	200	202	228	230
352	390			

## ORTHO-PARAHYDROGEN (OTHER THAN NORMAL)

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

NO EXPERIMENTAL DATA

## SOLID-VAPOR TRANSITION

## HEAT CAPACITY-SOLID

6 9 240 241 351

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

34

## TRIPLE POINT

## PRESSURE-TEMPERATURE DATA

200



## INDEX OF PROPERTIES (CONT.)

## HYDROGEN DEUTERIDE

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

NO EXPERIMENTAL DATA

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE  
422HEAT CAPACITY-SOLID  
211

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE  
31 243 244 369 370  
422DENSITY-LIQUID  
31 244DENSITY-VAPOR  
31 244

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA  
243 422

## INDEX OF PROPERTIES (CONT.)

## DEUTERIUM

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

MELTING PRESSURE

86 98 324 358 359

DENSITY-SOLID

41

DENSITY-LIQUID

41

HEAT OF FUSION

97 98 210 299

HEAT CAPACITY-SOLID

42

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE

71 72 212 325 326  
439

DENSITY-SOLID

310 349 350

HEAT CAPACITY-SOLID

96 97 98 203 204  
209 210 239 299

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE

31 71 72 194 212  
243 244 299 324 325

326 369 370 424

DENSITY-LIQUID

31 98 244 296 309

DENSITY-VAPOR

31 244

HEAT OF VAPORIZATION

98 299 495

HEAT CAPACITY-LIQUID

42 96 97 98 210  
299

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA

71 72 96 98 210  
243 299 325 326

DENSITY

98

## INDEX OF PROPERTIES (CONT.)

## HYDROGEN TRITIDE OR DEUTERIUM TRITIDE

SOLID-SOLID TRANSITION

NOT APPLICABLE

SOLID-LIQUID TRANSITION

NO EXPERIMENTAL DATA

SOLID-VAPOR TRANSITION

NO EXPERIMENTAL DATA

LIQUID-VAPOR TRANSITION

VAPOR PRESSURE

52 327

TRIPLE POINT

NO EXPERIMENTAL DATA

## TRITIUM

SOLID-SOLID TRANSITION

NOT APPLICABLE

SOLID-LIQUID TRANSITION

MELTING PRESSURE

359

SOLID-VAPOR TRANSITION

VAPOR PRESSURE

212

LIQUID-VAPOR TRANSITION

VAPOR PRESSURE

212

DENSITY-LIQUID

213

TRIPLE POINT

PRESSURE-TEMPERATURE DATA

212

## INDEX OF PROPERTIES (CONT.)

## NEON

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

## MELTING PRESSURE

285 287 358 435

## HEAT OF FUSION

94 101

## SOLID-VAPOR TRANSITION

## VAPOR PRESSURE

53 127 130 214 230  
277 278 412 469

## DENSITY-SOLID

138

## HEAT CAPACITY-SOLID

93 94 101

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

53 59 84 130 214  
230 278 378 386 387  
412 481

## DENSITY-LIQUID

128 343 386

## DENSITY-VAPOR

128 343

## HEAT CAPACITY-LIQUID

93 94 101

## TRIPLE POINT

## PRESSURE-TEMPERATURE DATA

53 94 101 214 230  
378 386 412 481

## INDEX OF PROPERTIES (CONT.)

## NITROGEN

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA				
23	25	92	112	175
199	414	446	460	

HEAT OF TRANSITION				
92	112	175	199	

## SOLID-LIQUID TRANSITION

MELTING PRESSURE				
46	73	74	92	106
175	195	216	286	287
358	403	409	414	435
482				

HEAT CAPACITY-SOLID				
73	74	216		

DENSITY-LIQUID				
73	74	216		

HEAT OF FUSION				
92	112	175	199	

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE				
23	25	64	82	155
199	228	271	308	485

DENSITY-SOLID				
137	413	479	480	

HEAT CAPACITY-SOLID				
92	112	175	199	288

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE				
12	13	22	23	24
25	27	37	56	60
79	81	82	87	110
125	154	183	192	193
199	205	228	229	230
237	247	248	257	271
306	354	389	402	450
485	490	493	501	502
504	506			

DENSITY-LIQUID				
38	55	148	157	252
336	347	474	504	

DENSITY-VAPOR				
47	147	197	347	

HEAT OF VAPORIZATION				
12	13	132	149	175
195	199	261	426	427

HEAT CAPACITY-LIQUID				
12	92	112	175	199
261	288	496		

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA				
23	25	106	110	112
183	199	228	230	263
271	288	306	482	

## INDEX OF PROPERTIES (CONT.)

## OXYGEN

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA				
23	25	65	92	175
201	242	266	394	403
445	447	448	451	

HEAT OF TRANSITION		
92	175	201

HEAT CAPACITY	
65	

## SOLID-LIQUID TRANSITION

MELTING PRESSURE				
92	150	175	195	266
287	328	329	358	384
403	414			

HEAT OF FUSION		
92	175	201

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE				
23	25	242		
HEAT CAPACITY-SOLID				
92	175	201	311	312

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE				
12	13	22	23	24
25	32	33	34	37
51	57	60	76	79
81	82	100	104	111
141	146	151	154	160
164	173	180	190	195
196	202	221	227	229
230	236	237	242	247
248	256	275	291	303
317	364	368	374	383
389	449	451	466	467
470	472	485	490	500
501	502			

DENSITY-LIQUID				
30	38	54	55	148
157	169	196	233	252
265	336	345	430	466
467	473	475	504	

DENSITY-VAPOR			
47	119	147	345

HEAT OF VAPORIZATION				
11	12	13	40	104
132	149	172	175	189
195	201	268	417	427

HEAT CAPACITY-LIQUID				
12	92	175	201	486

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA				
23	25	201	230	242
263	394	451		

## INDEX OF PROPERTIES (CONT.)

## AIR

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

NO EXPERIMENTAL DATA

## SOLID-VAPOR TRANSITION

NO EXPERIMENTAL DATA

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

195 316 355 371 501  
503

## DENSITY-LIQUID

316 355

## DENSITY-VAPOR

119 316 355

## HEAT OF VAPORIZATION

45 181 498

## HEAT CAPACITY-LIQUID

177

## TRIPLE POINT

NO EXPERIMENTAL DATA



## INDEX OF PROPERTIES (CONT.)

## CARBON MONOXIDE

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA  
 90 92 175 256

HEAT OF TRANSITION  
 90 92 175

## SOLID-LIQUID TRANSITION

MELTING PRESSURE  
 90 92 107 175 256  
 414 482

HEAT OF FUSION  
 90 92 175

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE  
 90 113 129 255 256  
 482

DENSITY-SOLID  
 480

HEAT OF SUBLIMATION  
 90

HEAT CAPACITY-SOLID  
 90 92 175

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE  
 38 79 81 90 113  
 129 141 174 220 237  
 255 256 357 377 425  
 482 501 502 506

DENSITY-LIQUID  
 38 80 81 340 341

DENSITY-VAPOR  
 80 81 340 341

HEAT OF VAPORIZATION  
 90 175

HEAT CAPACITY-LIQUID  
 90 92 175

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA  
 95 107 129 174 482

## INDEX OF PROPERTIES (CONT.)

## FLUORINE

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA  
262

HEAT OF TRANSITION  
249

## SOLID-LIQUID TRANSITION

HEAT OF FUSION  
249 266

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE  
26

HEAT CAPACITY-SOLID  
249 266

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE  
26 77 89 167 249

DENSITY-LIQUID  
157 159 167 168 253  
254 265 305 366 494

HEAT OF VAPORIZATION  
249

HEAT CAPACITY-LIQUID  
249 266

## TRIPLE POINT

NO EXPERIMENTAL DATA

## INDEX OF PROPERTIES (CONT.)

## ARGON

## SOLID-SOLID TRANSITION

NOT APPLICABLE

## SOLID-LIQUID TRANSITION

## MELTING PRESSURE

10	73	74	114	318
353	367	373	375	404
409	435			

## DENSITY-SOLID

73	74	318
----	----	-----

## DENSITY-LIQUID

73	74	318
----	----	-----

## HEAT OF FUSION

94	175	177	185	186
----	-----	-----	-----	-----

## SOLID-VAPOR TRANSITION

## VAPOR PRESSURE

61	63	88	123	124
185	186	190	223	

## DENSITY-SOLID

136	152	153	431	438
441				

## HEAT CAPACITY-SOLID

17	94	175	182	185
186	505			

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

59	60	63	67	88
102	111	120	123	151
185	190	223	248	323
368	373	375	404	411
415	476	490		

## DENSITY-LIQUID

38	55	121	323	346
375	404	474		

## DENSITY-VAPOR

47	121	323	346
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## HEAT OF VAPORIZATION

126	175	185	186	189
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## HEAT CAPACITY-LIQUID

36	94	175	177	185
259	260	487		

## HEAT CAPACITY-VAPOR

260

## TRIPLE POINT

## PRESSURE-TEMPERATURE DATA

61	94	95	111	123
185	190	248	353	356
401				

## DENSITY

114

## INDEX OF PROPERTIES (CONT.)

## METHANE

## SOLID-SOLID TRANSITION

## PRESSURE-TEMPERATURE DATA

92	105	109	115	116
188	198	315	444	447
468				

## HEAT OF TRANSITION

92	105	109	188	315
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## SOLID-LIQUID TRANSITION

## MELTING PRESSURE

92	114	191	256	456
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## HEAT OF FUSION

92	109	116	178
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## SOLID-VAPOR TRANSITION

## VAPOR PRESSURE

29	184	191	231	251
256	267	372		

## DENSITY-SOLID

235	336
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## HEAT CAPACITY-SOLID

92	105	109	115	116
178	188			

## LIQUID-VAPOR TRANSITION

## VAPOR PRESSURE

29	56	78	79	81
99	141	142	176	189
231	234	251	256	302
317	372	449	476	484

## DENSITY-LIQUID

56	78	80	81	302
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## DENSITY-VAPOR

47	56	78	80	81
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## HEAT OF VAPORIZATION

117	188	189	234	261
417				

## HEAT CAPACITY-LIQUID

92	116	178	234	261
496				

## TRIPLE POINT

## PRESSURE-TEMPERATURE DATA

28	29	109	114	116
122	191	315		

## INDEX OF PROPERTIES (CONT.)

## DEUTEROMETHANES

## SOLID-SOLID TRANSITION

PRESSURE-TEMPERATURE DATA  
 108 109 116 315 447

HEAT OF TRANSITION  
 108 109 315

## SOLID-LIQUID TRANSITION

MELTING PRESSURE  
 114

HEAT OF FUSION  
 108 109 116

## SOLID-VAPOR TRANSITION

VAPOR PRESSURE  
 28 29

HEAT CAPACITY-SOLID  
 108 109 116

## LIQUID-VAPOR TRANSITION

VAPOR PRESSURE  
 28 29 189

HEAT OF VAPORIZATION  
 116 117 189

HEAT CAPACITY-LIQUID  
 108 116

## TRIPLE POINT

PRESSURE-TEMPERATURE DATA  
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- 44 BAUM, J. L., BREWER, D. F., DAUNT, J. G., AND EDWARDS, D. O.  
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- 45 BEHN, U.  
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- 46 BENEDICT, M.  
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- 47 BENNEWITZ, K. AND ANDREEWA, N.  
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- 48 BERMAN, R. AND MATE, C. F.  
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- 49 BERMAN, R. AND POULTER, J.  
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- HELIUM, HEAT OF VAPORIZATION (2.9 TO 4.5 DEGREES K.) AND CALCULATED VALUES  
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- 50 BERMAN, R. AND SWENSON, C. A.  
ABSOLUTE TEMPERATURE SCALE BETWEEN 4.2 DEGREES AND 5.2 DEGREES K.  
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- OXYGEN, VAPOR PRESSURE-LIQUID (82 TO 90 DEGREES K.).  
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- 52 BIGELEISEN, J. AND KERR, E. C.  
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- 53 BIGELEISEN, J. AND ROTH, E.  
VAPOR PRESSURES OF THE NEON ISOTOPES.  
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- OXYGEN, DENSITY-LIQUID (78 DEGREES K.)  
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 DENSITY OF LIQUIFIED GAS SOLUTIONS NITROGEN-OXYGEN AND ARGON-OXYGEN.  
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 ARGON, DENSITY-LIQUID (84 TO 90 DEGREES K.).  
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- 56 BLOOMER, O. T. AND PARENT, J. D.  
 PHYSICAL-CHEMICAL PROPERTIES OF METHANE-NITROGEN MIXTURES.  
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- 57 BLUE, R. W. AND HICKS, J. F. G.  
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- 58 BOATO, G., CASANOVA, G., SCOLES, G., AND VALLAURI, M. E.  
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- 59 BOATO, G., CASANOVA, G., AND VALLAURI, M. E.  
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- 60 BOATO, G., SCOLES, G., AND VALLAURI, M. E.  
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- 61 BOATO, G., SCOLES, G., AND VALLAURI, M. E.  
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- ARGON, VAPOR PRESSURE-SOLID (72 TO 84 DEGREES K.), TRIPLE POINT. THIS WAS  
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- 62 BONHOEFFER, K. F. AND HARTECK, P.  
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- PARAHYDROGEN, VAPOR PRESSURE-LIQUID (20.26 AND 20.39 DEGREES K.), TRIPLE  
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- 63 BORN, F.  
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- ARGON, VAPOR PRESSURE-SOLID (66 TO 84 DEGREES K.) AND LIQUID (84 TO 90  
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- 64 BOROVIK, E. S., GRISHIN, S. F. AND GRISHINA, E. YA.  
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- 65 BOROVICK-ROMANOV, A. S., ORLOVA, M. P. AND STRELKOV, P. G.  
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- 66 BOROVICK-ROMANOV, A. S., AND STRELKOV, P. G.  
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- 67 BOURBO, P. AND ISCHKIN, I.  
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(VAPOR-LIQUID EQUILIBRIUM IN THE SYSTEM ARGON-OXYGEN.)  
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TABLE, GRAPH
- 69 BREWER, D. F. AND KEYSTON, J. R. G.  
SPECIFIC HEAT AND EXPANSION COEFFICIENT OF LIQUID HELIUM-3 UNDER PRESSURE BELOW 0.1 DEGREE K.  
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- 72 BRICKWEDDE, F. G., SCOTT, R. B., UREY, H. C. AND WAHL, M. H.  
 THE VAPOR PRESSURE OF DEUTERIUM.  
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 THE MELTING PARAMETERS OF NITROGEN AND ARGON UNDER PRESSURE, AND THE NATURE OF THE MELTING CURVE.  
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- 74 BRIDGMAN, P. W.  
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- 75 BUCHMANN, E.  
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 (HELIUM ISOTHERMS AT LOW TEMPERATURES AND HIGH PRESSURES.)  
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- 76 BULLE, F.  
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(VAPOR PRESSURE CURVE OF OXYGEN AND A DETERMINATION OF THE CRITICAL DATA  
FOR HYDROGEN.)  
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HYDROGEN, VAPOR PRESSURE-LIQUID (20 TO 32 DEGREES K.), CALCULATED VALUES  
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- 77 CADY, G. H. AND HILDEBRAND, J. H.  
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- 78 CARDOSO, E.  
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- 79 CARDOSO, E.  
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(EXPERIMENTAL DETERMINATION OF THE CRITICAL CONSTANTS OF OXYGEN,  
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- 80 CARDOSO, E.  
DENSITES DES PHASES COEXISTANTES DU METHANE ET DE L'OXYDE DE CARBONE.  
(DENSITY OF THE COEXISTENT PHASES OF METHANE AND OF CARBON MONOXIDE.)  
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- 81 CARDOSO, E.  
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(A CONTRIBUTION TO THE STUDY OF THE CRITICAL POINT OF SOME DIFFICULT GASES TO LIQUEFY -NITROGEN, CARBON MONOXIDE, OXYGEN, METHANE.)  
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OXYGEN, CRITICAL PRESSURE AND TEMPERATURE.  
METHANE, DENSITY-LIQUID AND VAPOR (166 TO 189 DEGREES K.), CRITICAL PRESSURE AND TEMPERATURE, EXTRAPOLATED VALUE OF CRITICAL DENSITY.  
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- 82 CATH, P. G.  
ON THE MEASUREMENT OF VERY LOW TEMPERATURES. VAPOUR-PRESSURES OF OXYGEN AND NITROGEN FOR OBTAINING FIXED POINTS ON THE TEMPERATURE SCALE BELOW 0 DEGREES C.  
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- 83 CATH, P. G. AND ONNES, H. K.  
ON THE MEASUREMENT OF LOW TEMPERATURES. XXVII. VAPOUR-PRESSURES OF HYDROGEN IN THE NEIGHBOURHOOD OF THE BOILING POINT AND BETWEEN THE BOILING POINT AND THE CRITICAL TEMPERATURE.  
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- 84 CATH, P. G. AND ONNES, H. K.  
ISOTHERMALS OF MONATOMIC SUBSTANCES AND THEIR BINARY MIXTURES. XIX. VAPOUR-PRESSURES OF NEON BETWEEN THE BOILING POINT AND THE CRITICAL POINT.  
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THE DIELECTRIC CONSTANT OF LIQUID HELIUM.  
PHYSICA VOL. 27, 1129-45 (1961)

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MELTING CURVES OF DEUTERIUM AND HYDROGEN.  
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DEUTERIUM, MELTING PRESSURE (18 TO 60 DEGREES K.).  
GRAPHICAL DATA ONLY

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- 88 CLARK, A. M., DIN, F., ROBB, J., MICHELS, A., WASSENAAR, T. AND  
ZWIETERING, TH.  
THE VAPOUR PRESSURE OF ARGON.  
PHYSICA VOL. 17, 876-884 (1951)

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THE VAPOR PRESSURE OF FLUORINE.  
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- 90 CLAYTON, J. O. AND GIAUQUE, W. F.  
THE HEAT CAPACITY AND ENTROPY OF CARBON MONOXIDE. HEAT OF VAPORIZATION.  
VAPOR PRESSURES OF SOLID AND LIQUID. FREE ENERGY TO 5000 DEGREES K FROM  
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CARBON MONOXIDE, HEAT CAPACITY-SOLID I (14 TO 59 DEGREES K.), SOLID II  
(63 TO 66 DEGREES K.) AND LIQUID (70 TO 85 DEGREES K.), HEAT OF FUSION,  
HEAT OF SUBLIMATION, HEAT OF VAPORIZATION, HEAT OF TRANSITION (SOLID I TO  
SOLID II), VAPOR PRESSURE-SOLID I (60 TO 62 DEGREES K.), SOLID II (62 TO  
68 DEGREES K.) AND LIQUID (68 TO 83 DEGREES K.), EQUATION FOR SOLID AND  
LIQUID VAPOR PRESSURE, MELTING TEMPERATURE, CALCULATED VALUE OF NORMAL  
BOILING POINT. SEE NUMBER 91 BELOW FOR CORRECTION .  
TABLE, EQUATION

- 91 CLAYTON, J. O. AND GIAUQUE, W. F.  
THE HEAT CAPACITY AND ENTROPY OF CARBON MONOXIDE. HEAT OF VAPORIZATION.  
VAPOR PRESSURE OF SOLID AND LIQUID. FREE ENERGY TO 5000 DEGREES K FROM  
SPECTROSCOPIC DATA.  
J. AM. CHEM. SOC. VOL. 55, 5071-3 (1933)

CORRECTION FOR NUMBER 90 ABOVE. CORRECTION DOES NOT INVOLVE ANY  
EXPERIMENTAL SATURATION PROPERTIES.

- 92 CLUSIUS, K.  
UBER DIE SPEZIFISCHE WARME EINIGER KONDENSIERTER GASE ZWISCHEN 10 GRAD  
ABS. UND IHREM TRIPELUNKT.  
(CONCERNING THE SPECIFIC HEAT OF CONDENSED GASES BETWEEN 10 DEGREES  
ABSOLUTE AND THEIR TRIPLE POINTS.)  
Z. PHYSIK. CHEM. (LEIPZIG) VOL. B3, 41-79 (1929)

NITROGEN, HEAT CAPACITY-SOLID II (10 TO 34 DEGREES K.), SOLID I (38 TO 61  
DEGREES K.) AND LIQUID (67 TO 73 DEGREES K.), HEAT OF FUSION (62 TO 66  
DEGREES K.), HEAT OF TRANSITION (SOLID I TO SOLID II 35 TO 38 DEGREES K.)  
SOLID-SOLID TRANSITION POINT, MELTING POINT.  
OXYGEN, HEAT CAPACITY-SOLID III (10 TO 23 DEGREES K.), SOLID II (25 TO 41  
DEGREES K.), SOLID I (45 TO 53 DEGREES K.) AND LIQUID (57 TO 73 DEGREES  
K.), HEAT OF FUSION (53 TO 57 DEGREES K.), HEATS OF TRANSITION (SOLID II  
TO SOLID III 23 TO 26 DEGREES K.) (SOLID I TO SOLID II 42 TO 48 DEGREES  
K.), SOLID-SOLID TRANSITION POINTS, MELTING POINT.  
METHANE, HEAT CAPACITY-SOLID II (10 TO 20 DEGREES K.), SOLID I (21 TO 87  
DEGREES K.), LIQUID (95 TO 105 DEGREES K.), HEAT OF FUSION (88 TO 95  
DEGREES K.), HEAT OF TRANSITION (SOLID I TO SOLID II 17 TO 21 DEGREES K.)  
SOLID-SOLID TRANSITION POINT, MELTING POINT.  
CARBON MONOXIDE, HEAT CAPACITY-SOLID II (12 TO 57 DEGREES K.), SOLID I  
(63 TO 66 DEGREES K.) AND LIQUID (70 TO 81 DEGREES K.), HEAT OF FUSION  
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DEGREES K.), SOLID-SOLID TRANSITION POINT, MELTING POINT.  
TABLE, GRAPH  
GERMAN

- 93 CLUSIUS, K.  
DIE DAMPFDRUCKKONSTANTE DES NEONS.  
(THE VAPOR PRESSURE CONSTANT OF NEON.)  
Z. PHYSIK. CHEM. (LEIPZIG) VOL. B4, 1-13 (1929)

NEON, HEAT CAPACITY-SOLID (11 TO 24 DEGREES K.) AND LIQUID (28 TO 44  
DEGREES K.), CALCULATED VALUES OF HEAT OF VAPORIZATION (AT 0 DEGREES K.)  
AND VAPOR PRESSURE CONSTANT.  
TABLE, GRAPH, EQUATION  
GERMAN

- 94 CLUSIUS, K.  
 ATOMWARMEN UND SCHMELZWARMEN VON NEON, ARGON, UND KRYPTON.  
 (ATOMIC HEAT AND HEAT OF FUSION OF NEON, ARGON, AND KRYPTON.)  
 Z. PHYSIK. CHEM. (LEIPZIG) VOL. B31, 459-74 (1936)
- NEON, HEAT CAPACITY-SOLID (12 TO 23 DEGREES K.) AND LIQUID (26 TO 27 DEGREES K.), HEAT OF FUSION (24 TO 25 DEGREES K.), TRIPLE POINT.  
 ARGON, HEAT CAPACITY-SOLID (10 TO 80 DEGREES K.) AND LIQUID (86 TO 89 DEGREES K.), HEAT OF FUSION (82 TO 85 DEGREES K.), TRIPLE POINT.  
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 GERMAN
- 95 CLUSIUS, K.  
 WIRD DIE SCHMELZSCHARFE DURCH DIE ISOTOPIE BEEINFLUSST. DIE  
 TRIPELPUNKTSDRUCKE DER GASE CO, A, N<sub>2</sub>O, HCL AND HBR.  
 (IS THE SHARPNESS OF THE MELTING POINT INFLUENCED BY THE ISOTOPES. THE  
 TRIPLE POINT PRESSURES OF THE GASES CARBON MONOXIDE, ARGON, NITROUS  
 OXIDE, HYDROGEN CHLORIDE AND HYDROGEN BROMIDE.)  
 Z. PHYSIK. CHEM. (LEIPZIG) VOL. B49, 12 (1941)
- ARGON, TRIPLE POINT PRESSURE.  
 CARBON MONOXIDE, TRIPLE POINT PRESSURE.  
 TABLE  
 GERMAN
- 96 CLUSIUS, K. AND BARTHOLOME, E.  
 DIE EIGENSCHAFTEN DES KONDENSIERTEN SCHWEREN WASSERSTOFFS.  
 (THE PROPERTIES OF CONDENSED HEAVY HYDROGEN.)  
 Z. TECH. PHYSIK VOL. 15, 545-7 (1934)
- DEUTERIUM, HEAT CAPACITY-SOLID (10 TO 18 DEGREES K.) AND LIQUID (19 TO 22 DEGREES K.), HEAT OF FUSION, MELTING TEMPERATURE, TRIPLE POINT PRESSURE, CALCULATED VALUE FOR LIQUID DENSITY AT THE TRIPLE POINT.  
 TABLE, GRAPH  
 GERMAN
- 97 CLUSIUS, K., AND BARTHOLOME, E.  
 DIE SPEZIFISCHE WARME UND SCHMELZWARME DES KONDENSIERTEN DIWASSERSTOFFS.  
 (THE SPECIFIC HEAT AND HEAT OF FUSION OF CONDENSED DEUTERIUM.)  
 NACHR. GES. WISS. GOTTINGEN VOL. 1, NO. 4, 29-39 (1934)
- DEUTERIUM, HEAT CAPACITY-SOLID (10 TO 18 DEGREES K.) AND LIQUID (19 TO 22 DEGREES K.), HEAT OF FUSION (18 TO 19 DEGREES K.).  
 TABLE, GRAPH  
 GERMAN
- 98 CLUSIUS, K. AND BARTHOLOME, E.  
 CALORISCHE UND THERMISCHE EIGENSCHAFTEN DES KONDENSIERTEN SCHWEREN  
 WASSERSTOFFS.  
 (CALORIMETRIC AND THERMAL PROPERTIES OF CONDENSED HEAVY HYDROGEN.)  
 Z. PHYSIK. CHEM. VOL. B30, 237-57 (1935)
- DEUTERIUM, HEAT CAPACITY-SOLID (10 TO 18 DEGREES K.) AND LIQUID (19 TO 22 DEGREES K.), HEAT OF FUSION (18 TO 19 DEGREES K.), HEAT OF VAPORIZATION (19.6 DEGREES K.), MELTING PRESSURE (18 TO 21 DEGREES K.), DENSITY-LIQUID (18 TO 21 DEGREES K.), TRIPLE POINT, EQUATIONS FOR MELTING CURVE AND LIQUID DENSITY, CALCULATION OF HEAT OF SUBLIMATION AT 0 DEGREES K. AND OF THE DENSITY OF THE SOLID AND LIQUID AT THE TRIPLE POINT.  
 TABLE, GRAPH, EQUATION  
 GERMAN

- 99 CLUSIUS, K., ENDTINGER, F., AND SCHLEICH, K.  
 ERGEBNISSE DER TIEFTEMPERATURFORSCHUNG. XXX. DIE DAMPFDRUCKDIFFERENZ VON  
 12-CH<sub>4</sub> UND 13-CH<sub>4</sub> ZWISCHEN SCHMELZ-UND SIEDEPUNKT.  
 (RESULTS OF LOW TEMPERATURE RESEARCH. XXX. THE VAPOR PRESSURE DIFFERENCE  
 OF CARBON 12 AND 13 METHANES BETWEEN MELTING AND BOILING POINTS.)  
 HELV. CHIM. ACTA VOL. 43, 1267-74 (1960)

METHANE, VAPOR PRESSURE-LIQUID (91 TO 110 DEGREES K.) THE DATA ARE  
 PRESENTED AS AN EQUATION WHICH GIVES THE RATIO OF THE VAPOR PRESSURES OF  
 METHANE WITH CARBON 12 AND METHANE WITH CARBON 13, CALCULATED VALUES OF  
 TRIPLE POINT AND NORMAL BOILING POINT.

TABLE, EQUATION  
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- 100 CLUSIUS, K., ENDTINGER, F. AND SCHLEICH, K.  
 13. ERGEBNISSE DER TIEFTEMPERATURFORSCHUNG. XXXIII. DIE  
 DAMPFDRUCKDIFFERENZ VON OXYGEN-16 UND OXYGEN-18 ZWISCHEN 63 GRAD UND 90  
 GRAD K.  
 (RESULTS OF LOW TEMPERATURE RESEARCH. XXXIII. THE VAPOR PRESSURE  
 DIFFERENCE OF OXYGEN-16 AND OXYGEN-18 BETWEEN 63 AND 90 DEGREES K.)  
 HELV. CHIM. ACTA VOL. 44, 98-105 (1961)

OXYGEN, VAPOR PRESSURE-LIQUID (63 TO 90 DEGREES K.) THE DATA ARE FOR  
 ISOTOPE 16 AND FOR THE RATIO OF THE VAPOR PRESSURES OF ISOTOPES 16 AND  
 18, AN EQUATION IS GIVEN FOR THIS RATIO, CALCULATED VALUES OF HEAT OF  
 VAPORIZATION AND NORMAL BOILING POINT-DIFFERENCE BETWEEN THE ISOTOPES.

TABLE, GRAPH, EQUATION  
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- 101 CLUSIUS, K., FLUBACHER, P., PIESBERGEN, U., SCHLEICH, K. AND  
 SPERANDIO, A.  
 ERGEBNISSE DER TIEFTEMPERATURFORSCHUNG. XXVII. VERGLEICH DER ATOM- UND  
 SCHMELZWARMEN SOWIE DER ENTROPIEN DER KONDENSIERTEN ISOTOPE NEON-20 UND  
 NEON-22.  
 (RESULTS OF LOW TEMPERATURE RESEARCH. XXVII. COMPARISON OF THE ATOMIC AND  
 MELTING HEATS AS WELL AS THE ENTROPY OF CONDENSED ISOTOPE NEON-20 AND  
 NEON-22.)  
 Z. NATURFORSCH. VOL. 15A, 1-9 (1960)

NEON (ISOTOPES 20 AND 22), HEAT CAPACITY-SOLID (8 TO 23 DEGREES K.), AND  
 LIQUID (25 TO 26 DEGREES K.), HEAT OF FUSION (24 TO 26 DEGREES K.),

TRIPLE POINT.  
 TABLE, GRAPH  
 GERMAN

- 102 CLUSIUS, K. AND FRANK, A.  
 ZUR ENTROPIE DES ARGONS.  
 (ON THE ENTROPY OF ARGON.)  
 Z. ELEKTROCHEM. VOL. 49, NO. 4, 308-9 (1943)

ARGON, NORMAL BOILING POINT.  
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 GERMAN



- 103 CLUSIUS, K. AND HILLER, K.  
DIE SPEZIFISCHEN WÄRMEN DES PARAWASSERSTOFFS IN FESTEM, FLÜSSIGEM UND GASFORMIGEM ZUSTANDE.  
(SPECIFIC HEAT OF PARAHYDROGEN IN SOLID, LIQUID AND GASEOUS STATES.)  
Z. PHYSIK. CHEM. (LEIPZIG) VOL. B4, 158-68 (1929)
- PARAHYDROGEN, HEAT CAPACITY-SOLID (11 TO 13 DEGREES K.) AND LIQUID (15 TO 18 DEGREES K.), HEAT OF FUSION (14 TO 15 DEGREES K.), TRIPLE POINT TEMPERATURE.  
TABLE, GRAPH  
GERMAN
- 104 CLUSIUS, K. AND KONNERTZ, F.  
ERGEBNISSE DER TIEFTEMPÉRATURFORSCHUNG. VI. KALORIMETRISCHE MESSUNGEN DER VERDAMPFUNGSWARME DES SAUERSTOFFS BEI NORMALEM DRUCK SOWIE DES ÄTHYLENS UND PROPYLENS UNTERHALB UND OBERHALB VOM ATMOSPHERENDRUCK.  
(RESULTS OF LOW TEMPERATURE INVESTIGATIONS. VI. CALORIMETRIC MEASUREMENTS OF THE LATENT HEAT OF VAPORIZATION OF OXYGEN NEAR NORMAL PRESSURE AS WELL AS ETHYLENE AND PROPYLENE BELOW AND ABOVE ATMOSPHERIC PRESSURE.)  
Z. NATURFORSCH. PT. A. VOL. 4A, 117-240(1949)
- OXYGEN, NORMAL BOILING POINT, HEAT OF VAPORIZATION AT NBP.  
TABLE  
GERMAN
- 105 CLUSIUS, K. AND PERLICK, A.  
DIE UNSTETIGKEIT IM THERMISCHEN UND KALORISCHEN VERHALTEN DES METHANS BEI 20.4 GRAD ABS. ALS PHASENUMWANDLUNG ZWEITER ORDNUNG.  
(THE CHANGE IN THE THERMAL BEHAVIOR OF METHANE AT 20.4 DEGREES K FOR THE SECOND ORDER PHASE TRANSITION.)  
Z. PHYSIK. CHEM. VOL. B24, 313-27 (1934)
- METHANE, HEAT CAPACITY-SOLID II (15 TO 20 DEGREES K.) AND SOLID I (20 TO 25 DEGREES K.), SOLID-SOLID TRANSITION (SOLID I TO SOLID II 20 TO 21 DEGREES K. PRESSURES TO 200 ATMOSPHERES), HEAT OF TRANSITION (SOLID I TO SOLID II 19 TO 21 DEGREES K.).  
TABLE, GRAPH  
GERMAN
- 106 CLUSIUS, K., PIESBERGEN, U., AND VARDE, E.  
ERGEBNISSE DER TIEFTEMPÉRATURFORSCHUNG. XXVIII. DIE SCHMELZKURVE DES STICKSTOFFS BIS 250 ATM. UND DES STICKSTOFFMONOXYDS BIS 75 ATM.  
(RESULTS OF LOW TEMPERATURE RESEARCH. XXVIII. THE MELTING CURVE OF NITROGEN TO 250 ATM. AND OF NITROUS OXIDE TO 75 ATM.)  
HELV. CHIM. ACTA VOL. 42, 2356-64 (1959)
- NITROGEN, MELTING PRESSURE (63 TO 68 DEGREES K.), TRIPLE POINT, CALCULATED VALUES OF DENSITY OF SOLID AND LIQUID AT THE TRIPLE POINT AND OF THE HEAT OF FUSION.  
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- 107 CLUSIUS, K., PIESBERGEN, U. AND VARDE, E.  
 ERGEBNISSE DER TIEFTEMPORATURFORSCHUNG. XXXIII. DIE SCHMELZKURVE VOM KOHLENOXYD BIS 250 ATM. UND SEIN VOLUMENSPRUNG AM SCHMELZPUNKT.  
 (RESULTS OF LOW TEMPERATURE RESEARCH. XXXIII. THE MELTING POINT CURVE OF CARBON MONOXIDE UP TO 250 ATM. AND ITS VOLUME DISCONTINUITY AT THE MELTING POINT.)  
 HELV. CHIM. ACTA VOL. 43, 2059-63 (1960)
- CARBON MONOXIDE, MELTING PRESSURE (68 TO 74 DEGREES K.), TRIPLE POINT, CALCULATED VALUES OF DENSITY OF SOLID AND LIQUID AT THE TRIPLE POINT AND OF THE HEAT OF FUSION.  
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- 108 CLUSIUS, K. AND POPP, L.  
 DIE MOLWARMEN, SCHMELZ- UND UMWANDLUNGSWARMEN DER KONDENSIERTEN GASE CD<sub>4</sub> UND CH<sub>3</sub>D.  
 (THE HEAT CAPACITY, HEAT OF FUSION AND HEATS OF TRANSITION OF THE CONDENSED GASES, DEUTEROMETHANES.)  
 Z. PHYSIK. CHEM. (LEIPZIG) VOL. B46, 63-81 (1940)
- DEUTERO-METHANES (CH<sub>3</sub>D AND CD<sub>4</sub>), HEAT CAPACITY-SOLID III (11 TO 20 DEGREES K.), SOLID II (20 TO 25 DEGREES K.), SOLID I (27 TO 87 DEGREES K.) AND LIQUID (92 TO 100 DEGREES K.), HEAT OF FUSION (89 TO 95 DEGREES K.), HEATS OF TRANSITION (SOLID II TO SOLID III AND SOLID I TO SOLID II), SOLID-SOLID TRANSITIONS.  
 TABLE, GRAPH  
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- 109 CLUSIUS, K., POPP, L. AND FRANK, A.  
 UBER UMWANDLUNGEN DES FESTEN MONO- UND TETRADEUTEROMETHANS. DIE ENTROPIEVERHALTNISSE DES MONODEUTEROMETHANS CH<sub>3</sub>D UND DES DEUTERIUMHYDRIDS HD.  
 (THE TRANSITION OF SOLID MONO- AND TETRADEUTEROMETHANE. THE ENTROPY RELATIONS OF MONODEUTEROMETHANE AND DEUTERIUM HYDRIDE.)  
 PHYSICA VOL. 4, 1105-15 (1937)
- METHANE, SOLID-SOLID TRANSITION (SOLID ALPHA TO SOLID BETA), HEAT OF TRANSITION, HEAT OF FUSION, MELTING TEMPERATURE AND GRAPH OF HEAT CAPACITY (15 TO 100 DEGREES K.) SHOWING SOLID-SOLID TRANSITION AND MELTING POINT, TRIPLE POINT.  
 DEUTERO-METHANES (CH<sub>3</sub>D AND CD<sub>4</sub>), SOLID-SOLID TRANSITIONS (SOLID ALPHA TO SOLID BETA AND SOLID BETA TO SOLID GAMMA), HEATS OF TRANSITION AND HEAT OF FUSION, MELTING TEMPERATURE, GRAPH OF HEAT CAPACITY (15 TO 100 DEGREES K.) SHOWING SOLID-SOLID TRANSITIONS AND MELTING POINT, TRIPLE POINT.  
 TABLE, GRAPH  
 GERMAN
- 110 CLUSIUS, K. AND SCHLEICH, K.  
 ERGEBNISSE DER TIEFTEMPORATURFORSCHUNG. XX. DIREKTER VERGLEICH DER DAMPFDRUCKE VON <sup>14</sup>N<sub>2</sub>, <sup>14</sup>N<sup>15</sup>N UND <sup>15</sup>N<sub>2</sub> SOWIE VON <sup>14</sup>N<sup>16</sup>O, <sup>15</sup>N<sup>16</sup>O UND <sup>14</sup>N<sup>18</sup>O ZWISCHEN IHREN SCHMELZ- UND SIEDEPUNKTEN.  
 (RESULTS OF LOW TEMPERATURE RESEARCH. DIRECT COMPARISON OF THE VAPOR PRESSURE OF NITROGEN ISOTOPES-14,15 IN N<sub>2</sub> AND NITROGEN ISOTOPES-14,15 AND OXYGEN ISOTOPES-16,18 IN NITRIC OXIDE BETWEEN THEIR MELTING AND BOILING POINTS.)  
 HELV. CHIM. ACTA VOL. 41, 1342-58 (1958)
- NITROGEN (ISOTOPES 14 AND 15), VAPOR PRESSURE-LIQUID (63 TO 77 DEGREES K) TRIPLE POINT.  
 TABLE, GRAPH, EQUATION  
 GERMAN

- 111 CLUSIUS, K., SCHLEICH, K. AND VOGELMANN, M.  
 ERGEBNISSE DER TIEFTEMPORATURFORSCHUNG. XL. DIE DAMPFDROPCKE VON 36AR UND 40AR ZWISCHEN SCHMELZ- UND SIEDEPUNKT.  
 (LOW-TEMPERATURE RESEARCH. XL. THE VAPOR PRESSURES OF ARGON ISOTOPES 36 AND 40 BETWEEN THE MELTING AND BOILING POINTS.)  
 HELV. CHIM. ACTA VOL. 46, NO. 5, 1705-14 (1963)
- ARGON, VAPOR PRESSURE-LIQUID (84 TO 88 DEGREES K.), NORMAL BOILING POINT, TRIPLE POINT. EQUATION FOR LIQUID VAPOR PRESSURE OF MIXTURES OF ARGON ISOTOPES 36 AND 40.  
 OXYGEN, VAPOR PRESSURE-LIQUID (84 TO 88 DEGREES K.).  
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- 112 CLUSIUS, K., SPERANDIO, A. AND PIESBERGEN, U.  
 ERGEBNISSE DER TIEFTEMPORATURFORSCHUNG. XXIV. VERGLEICH DER MOL-, UMWANDLUNGS- UND SCHMELZWARMEN SOWIE DIE ENTROPIEN DER KONDENSIERTEN ISOPE 14-N2 UND 15-N2.  
 (RESULTS OF LOW TEMPERATURE INVESTIGATIONS. XXIV. COMPARISON OF THE MOLAR HEAT, HEAT OF TRANSITION, AND HEAT OF FUSION AS WELL AS THE ENTROPIES OF THE CONDENSED ISOTOPES NITROGEN-14 AND NITROGEN-15.)  
 Z. NATURFORSCH. VOL. 14A, NO. 9, 793-801 (1959)
- NITROGEN (ISOTOPES 14 AND 15), HEAT CAPACITY-SOLID ALPHA (10 TO 35 DEGREES K.), HEAT CAPACITY-SOLID BETA (36 TO 63 DEGREES K.), HEAT CAPACITY-LIQUID (65 TO 69 DEGREES K.), HEAT OF FUSION, SOLID-SOLID TRANSITION TEMPERATURE (SOLID ALPHA TO SOLID BETA).  
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 GERMAN
- 113 CLUSIUS, K. AND TESKE, W.  
 DAMPFDROPCKE UND DAMPFDROPCKKONSTANTE DES KOHLENOXYDS.  
 (VAPOR PRESSURE AND VAPOR PRESSURE CONSTANTS OF CARBON MONOXIDE.)  
 Z. PHYSIK. CHEM. VOL. B6, 135-51 (1929)
- CARBON MONOXIDE, VAPOR PRESSURE-SOLID (60 TO 68 DEGREES K.), VAPOR PRESSURE-LIQUID (70 TO 80 DEGREES K.), EQUATION FOR VAPOR PRESSURE, CALCULATED VALUES OF MELTING TEMPERATURE AND SOLID-SOLID TRANSITION TEMPERATURE (SOLID I TO SOLID II).  
 TABLE, EQUATION  
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- 114 CLUSIUS, K. AND WEIGAND, K.  
 DIE SCHMELZKURVEN DER GASE A, KR, X, CH4, CH3D, CD4 C2H4, C2H6, COS UND PH3 BIS 200 ATM. DRUCK. DER VOLUMENSPRUNG BEIM SCHMELZEN.  
 (THE MELTING CURVES OF THE GASES ARGON, KRYPTON, XENON, THE DEUTERO METHANES CH3D AND CD4, ETHYLENE, ETHANE, CARBONYL SULFIDE, AND HYDROGEN PHOSPHIDE UP TO 200 ATM. PRESSURE. THE VOLUME DISCONTINUITY AT MELTING.)  
 Z. PHYSIK. CHEM. VOL. B46, 1-37 (1940)
- ARGON, MELTING PRESSURE (84 TO 89 DEGREES K.), TRIPLE POINT, DENSITY-SOLID (AT TRIPLE POINT).  
 METHANE, MELTING PRESSURE (91 TO 95 DEGREES K.), TRIPLE POINT.  
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- 115 COLWELL, J. H., GILL, E. K. AND MORRISON, J. A.  
SECOND TRANSITION IN SOLID METHANE.  
J. CHEM. PHYS. VOL. 36, 2223-4 (1962)
- METHANE, HEAT CAPACITY-SOLID (10 TO 25 DEGREES K.) SHARP DISCONTINUITIES SHOW THE PRESENCE OF SOLID-SOLID TRANSITIONS (TWO TRANSITIONS ARE SHOWN). GRAPHICAL DATA ONLY
- 116 COLWELL, J. H., GILL, E. K., AND MORRISON, J. A.  
THERMODYNAMIC PROPERTIES OF CH<sub>4</sub> AND CD<sub>4</sub>. INTERPRETATION OF THE PROPERTIES OF SOLIDS.  
J. CHEM. PHYS. VOL. 39, NO. 3, 635-53 (1963)
- METHANE, HEAT CAPACITY-SOLID II (5 TO 20 DEGREES K.), HEAT CAPACITY-SOLID I (20 TO 90 DEGREES K.), HEAT CAPACITY-LIQUID (93 DEGREES K.), HEAT OF FUSION (90 TO 92 DEGREES K.), SOLID-SOLID TRANSITION, TRIPLE POINT. DEUTERO-METHANE (CD<sub>4</sub>), HEAT CAPACITY-SOLID III (2 TO 21 DEGREES K.), HEAT CAPACITY-SOLID II (22 TO 26 DEGREES K.), HEAT CAPACITY-SOLID I (27 TO 87 DEGREES K.), HEAT CAPACITY-LIQUID (91 TO 95 DEGREES K.), HEAT OF FUSION (88 TO 90 DEGREES K.), HEAT OF VAPORIZATION, SOLID-SOLID TRANSITIONS, TRIPLE POINT. SEE NUMBER 117 BELOW FOR CORRECTIONS.  
TABLE, GRAPH
- 117 COLWELL, J. H., GILL, E. K., AND MORRISON, J. A.  
THERMODYNAMIC PROPERTIES OF METHANE AND DEUTEROMETHANE.  
J. CHEM. PHYS. VOL. 40, NO. 7, 2041-2 (1964)
- METHANE, HEAT OF VAPORIZATION (101 DEGREES K.).  
DEUTEROMETHANE (CH<sub>2</sub>D<sub>2</sub>), HEAT OF VAPORIZATION (101 DEGREES K.).  
DEUTEROMETHANE (CH<sub>4</sub>), HEAT OF VAPORIZATION (98 TO 104 DEGREES K.).  
CORRECTION FOR NUMBER 116 ABOVE.  
TABLE
- 118 COOK, G. A., DWYER, R. F. AND JENKINS, A. C.  
RESEARCH ON RHEOLOGIC AND THERMODYNAMIC PROPERTIES OF SOLID AND SLUSH HYDROGEN.  
LINDE CORP., TONAWANDA, N. Y., QUART. REPT. NO. 3 (APR 1964) CONTR. NO. AF 33(657)-11098
- PARAHYDROGEN, MELTING LINE (14 TO 21 DEGREES K.), DENSITY-SOLID (14 TO 22 DEGREES K.), HEAT OF FUSION (14 TO 22 DEGREES K.). EQUATION FOR HEAT OF FUSION.  
A MORE COMPLETE REPORT OF THIS WORK APPEARS IN.  
LINDE DIV., UNION CARBIDE CORP., TONAWANDA, N. Y., TWELVE-MONTHS REPT. (OCT 1964) PROJ. NO. 3048, CONTR. NO. A.F. 33 (657)-11098  
(AUTHORS, DWYER, R. F. AND COOK, G. A.)  
TABLE
- 119 COOK, S. R.  
ON THE VELOCITY OF SOUND IN GASES AND THE RATIO OF THE SPECIFIC HEATS, AT THE TEMPERATURE OF LIQUID AIR.  
PHYS. REV. VOL. 23, 212-37 (1906)
- AIR, DENSITY-VAPOR (84 DEGREES K.).  
OXYGEN, DENSITY-VAPOR (84 AND 89 DEGREES K.).  
THE CONDITION OF THE FLUIDS IN THIS REFERENCE IS NOT STATED BUT THE DATA ARE VERY NEAR SATURATION.  
TABLE

- 120 CROMMELIN, C. A.  
 ISOTHERMS OF MONATOMIC GASES AND OF THEIR BINARY MIXTURES. IV. REMARKS ON THE PREPARATION OF ARGON. V. VAPOUR PRESSURES ABOVE - 140 DEGREES C., CRITICAL TEMPERATURE AND CRITICAL PRESSURE OF ARGON.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 115 (1910)  
 ALSO IN KONINKL. NED. AKAD. WETENSCHAP, PROC. VOL. 13, 54-65 (1910)
- ARGON, VAPOR PRESSURE-LIQUID (132 TO 150 DEGREES K.), CRITICAL PRESSURE AND TEMPERATURE, EQUATION FOR VAPOR PRESSURE  
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- 121 CROMMELIN, C. A.  
 ISOTHERMS OF MONATOMIC GASES AND THEIR BINARY MIXTURES. VI. COEXISTING LIQUID AND VAPOR DENSITIES OF ARGON, CALCULATION OF THE CRITICAL DENSITY OF ARGON.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 118A (1910)  
 ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 13, 607-13 (1911)  
 TRANSLATION FROM VERSLAG. GEWONE VERGADER. AFDEL. NATUURK. KONINKL. NED. AKAD. WETENSCHAP. VOL. 18, 390-6 (1910)
- ARGON, DENSITY-LIQUID (133 TO 148 DEGREES K.), DENSITY-VAPOR (133 TO 148 DEGREES K.).  
 A PREVIOUS PAPER BY THE SAME AUTHOR (NUMBER 120 ABOVE) PROVIDES DATA BY WHICH THE DIFFERENCE BETWEEN LIQUID AND VAPOR DENSITIES WERE DETERMINED.  
 TABLE, GRAPH
- 122 CROMMELIN, C. A.  
 ON THE TRIPLE POINT OF METHANE.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 131B (1912)  
 ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 15, 666 (1912)
- METHANE, TRIPLE POINT.  
 TABLE (1 VALUE)
- 123 CROMMELIN, C. A.  
 ISOTHERMALS OF MONATOMIC GASES AND OF THEIR BINARY MIXTURES. XV. VAPOR PRESSURE OF SOLID AND LIQUID ARGON FROM THE CRITICAL POINT DOWN TO -206 DEGREES C.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 138C (1913)  
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- ARGON, VAPOR PRESSURE-SOLID (67 TO 84 DEGREES K.), VAPOR PRESSURE-LIQUID (84 TO 150 DEGREES K.), TRIPLE POINT, EQUATION FOR VAPOR PRESSURE.  
 THIS PAPER CONTAINS A COMPILATION OF THE AUTHORS PREVIOUS ARGON DATA AS WELL AS NEW DATA.  
 TABLE, EQUATION
- 124 CROMMELIN, C. A.  
 ISOTHERMS OF MONATOMIC GASES AND THEIR BINARY MIXTURES. XVI. NEW DETERMINATIONS OF THE VAPOR PRESSURE OF SOLID ARGON TO -205 DEGREES.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 140A (1914)  
 TRANSLATION FROM VERSLAG GEWONE VERGADER. AFDEL. NATUURK. KONINKL. NED. AKAD. WETENSCHAP. VOL. 22, 1212-15 (1914)
- ARGON, VAPOR PRESSURE-SOLID (68 TO 83 DEGREES K.), CALCULATED VALUES OF HEAT OF SUBLIMATION.  
 TABLE, EQUATION

- 125 CROMMELIN, C. A.  
ISOTHERMS OF DIATOMIC GASES AND THEIR BINARY MIXTURES. XVI. VAPOR PRESSURE OF NITROGEN BETWEEN THE CRITICAL POINT AND THE BOILING POINT. COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 145D (1915)  
TRANSLATIONN FROM VERSLAG GEWONE VERGADER. AFDEL. NATUURK. KONINKL. NED. AKAD. WETENSCHAP. VOL. 23, 991-4 (1915)
- NITROGEN, VAPOR PRESSURE-LIQUID (81 TO 124 DEGREES K.), CRITICAL PRESSURE AND TEMPERATURE, EQUATION FOR VAPOR PRESSURE.  
TABLE, EQUATION
- 126 CROMMELIN, C. A.  
FALL IN PRESSURE, DENSITY, AND HEAT OF VAPORIZATION OF ARGON. Z. SAUERSTOFF STICKSTOFF IND. VOL. 11, 81-3 (1919)
- ARGON, HEAT OF VAPORIZATION (87 DEGREES K.).  
THE JOURNAL ARTICLE WAS NOT AVAILABLE, HOWEVER ONE VALUE IS REPORTED IN THE ABSTRACT APPEARING IN CHEMICAL ABSTRACTS VOL. 14, 3342 (1920).  
TABLE (1 VALUE)  
GERMAN
- 127 CROMMELIN, C. A.  
SUR LA PURIFICATION DU NEON ET SUR UNE NOUVELLE DETERMINATION DE LA TEMPERATUR CRITIQUE DU NEON.  
(THE PURIFICATION OF NEON AND A NEW DETERMINATION OF THE CRITICAL TEMPERATURE OF NEON.)  
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- NEON, VAPOR PRESSURE-SOLID (14 AND 20 DEGREES K.), CRITICAL TEMPERATURE.  
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- 128 CROMMELIN, C. A.  
APPENDICE A L'ARTICLE PRECEDENT. SUR LA COURBE DES DENSITES DU NEON.  
(ADDITION TO A PRECEDING ARTICLE. THE DENSITY CURVE OF NEON.)  
PHYS. BER. VOL. 4, 702 (1923)  
ALSO IN ONNES-FESTSCHRIFT (1922) PAGE 197
- NEON, CRITICAL DENSITY (NO TEMPERATURE GIVEN).  
TABLE (1 VALUE)  
GERMAN
- 129 CROMMELIN, C. A., BIJLEVELD, W. J. AND BROWN, E. G.  
VAPOUR PRESSURES, CRITICAL POINT AND TRIPLE-POINT OF CARBON MONOXIDE.  
PROC. KON. AKAD. AMSTERDAM VOL. 34, 1314 (1931)  
ALSO IN COMMUNS. PHYS. LAB. UNIV. LEIDEN 217B (1931)
- CARBON MONOXIDE, VAPOR PRESSURE-SOLID (57 TO 68 DEGREES K.), VAPOR PRESSURE-LIQUID (68 TO 133 DEGREES K.), TRIPLE POINT, NORMAL BOILING POINT, CRITICAL PRESSURE AND TEMPERATURE, EQUATION FOR VAPOR PRESSURE (LIQUID RANGE ONLY).  
TABLE, EQUATION

- 130 CROMMELIN, C. A. AND GIBSON, R. O.  
THE VAPOUR PRESSURES OF SOLID AND LIQUID NEON.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 185B (1927)  
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173-6 (1927)
- NEON, VAPOR PRESSURE-SOLID (16 TO 25 DEGREES K.), VAPOR PRESSURE-LIQUID  
(26 TO 27 DEGREES K.), EXTRAPOLATED VALUE FOR TRIPLE POINT PRESSURE.  
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- 131 CWILONG, B. M.  
SOLIDIFICATION CURVE OF HELIUM II.  
PHYS. REV. VOL. 88, 135-7 (1952)
- HELIUM (HELIUM II), MELTING PRESSURE (1.4 TO 2.2 DEGREES K.).  
GRAPHICAL DATA ONLY
- 132 DANA, L. I.  
THE LATENT HEAT OF VAPORIZATION OF LIQUID OXYGEN-NITROGEN MIXTURES.  
PROC. AM. ACAD. ARTS SCI. VOL. 60, NO. 4, 241-267 (1925)
- NITROGEN, HEAT OF VAPORIZATION (AT NORMAL BOILING POINT).  
OXYGEN, HEAT OF VAPORIZATION (AT NORMAL BOILING POINT).  
TABLE, GRAPH
- 133 DANA, L. I. AND ONNES, H. K.  
FURTHER EXPERIMENTS WITH LIQUID HELIUM. BA. PRELIMINARY DETERMINATION OF  
THE LATENT HEAT OF VAPORIZATION OF LIQUID HELIUM.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 179C (1925)  
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WETENSCHAP. VOL. 34, 1335-9 (1925)  
ALSO IN KONINKL. NED. AKAD. WETENSCHAP. PROC. VOL. 29, 1051-60 (1926)
- HELIUM, HEAT OF VAPORIZATION (1.5 TO 4.2 DEGREES K.).  
THE DATA IN COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 179C (1925) SHOULD BE  
USED AS MORE ACCURATE LIQUID DENSITIES WERE USED.  
TABLE, GRAPH
- 134 DANA, L. I. AND ONNES, H. K.  
FURTHER EXPERIMENTS WITH LIQUID HELIUM. BB. PRELIMINARY DETERMINATIONS OF  
THE SPECIFIC HEAT OF LIQUID HELIUM.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 179D (1926)  
ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 29, 1061-68 (1926)
- HELIUM, HEAT CAPACITY-LIQUID (2.6 TO 4.0 DEGREES K.).  
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- 135 DASH, J. G. AND TAYLOR, R. D.  
TRANSITION TEMPERATURES OF HELIUM-3 IN HELIUM-4 SOLUTIONS.  
PHYS. REV. VOL. 99, 598-9 (1955)
- HELIUM-4, LIQUID-LIQUID TRANSITION (HELIUM I TO HELIUM II) A  
DETERMINATION OF THE TEMPERATURE AND PRESSURE AT THE LAMBDA POINT.  
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- 136 DE SMEDT, J. AND KEESOM, W. H.  
THE CRYSTAL STRUCTURE OF ARGON. RESEARCHES ON THE STRUCTURE OF NITROGEN AND OXYGEN AT THE TEMPERATURE OF LIQUID HYDROGEN.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 178B (1925)  
TRANSLATION FROM PHYSICA VOL. 5, 344 (1925)
- ARGON, DENSITY-SOLID (APPROX. 20 DEGREES K.) (SPECTROSCOPIC DETERMINATION)  
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- 137 DE SMEDT, J., KEESOM, W. H. AND MOOY, H. H.  
ANALYSE CRISTALLINE DE L'AZOTE SOLIDE ALPHA I.  
(CRYSTALLINE STUDIES OF SOLID NITROGEN - ALPHA I.)  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 202A (1929)
- NITROGEN, DENSITY-SOLID ALPHA (APPROX. 20 DEGREES K.) (SPECTROSCOPIC DETERMINATION).  
TABLE (1 VALUE)  
FRENCH
- 138 DE SMEDT, J., KEESOM, W. H. AND MOOY, H. H.  
ON THE CRYSTAL STRUCTURE OF NEON.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 203E (1930)  
ALSO IN PROC. AKAD. WETENSCHAP. AMSTERDAM VOL. 33, NO. 3, 255-7 (1930)
- NEON, DENSITY-SOLID (APPROX. 4 DEGREES K.) (SPECTROSCOPIC DETERMINATION).  
TABLE (1 VALUE)
- 139 DE VRIES, G. AND DAUNT, J. G.  
SPECIFIC HEAT OF HELIUM-3 BETWEEN 1.3 AND 2.3 DEGREES K.  
PHYS. REV. VOL. 92, 1572-3 (1953)
- HELIUM-3, HEAT CAPACITY-LIQUID (1.3 TO 2.3 DEGREES K.).  
GRAPHICAL DATA ONLY
- 140 DE VRIES, G. AND DAUNT, J. G.  
SPECIFIC HEAT OF 96-PERCENT HELIUM-3 BELOW 1 DEGREE K.  
PHYS. REV. VOL. 93, 631-2 (1954)
- HELIUM-3, HEAT CAPACITY-LIQUID (0.5 TO 1.5 DEGREES K.).  
GRAPHICAL DATA ONLY
- 141 DEVYATYKH, G. G. AND ZORIN, A. D.  
DETERMINATION OF THE RELATIVE VAPOR PRESSURE OF METHANE AND OXYGEN ISOTOPES BY THE RAYLEIGH DISTILLATION METHOD.  
ZHUR. FIZ. KHIM. VOL. 30, 1133-39 (1956)
- METHANE (WITH CARBON ISOTOPE 13), VAPOR PRESSURE-LIQUID (91 TO 112 DEGREES K.).  
CARBON MONOXIDE (WITH CARBON ISOTOPE 13), VAPOR PRESSURE-LIQUID (79 DEGREES K.).  
OXYGEN (ISOTOPE 18), VAPOR PRESSURE-LIQUID (55 TO 90 DEGREES K.).  
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- 142 DEWAR, J.  
ON THE LIQUEFACTION OF OXYGEN AND THE CRITICAL VOLUMES OF FLUIDS.  
PHIL. MAG. VOL. 18, 210-16 (1884)
- METHANE, CRITICAL TEMPERATURE AND PRESSURE.  
TABLE (1 VALUE)
- 143 DEWAR, J.  
THE BOILING POINT AND DENSITY OF LIQUID HYDROGEN.  
PROC. CHEM. SOC. (LONDON) VOL. 14, 146-7 (1898)
- HYDROGEN, NORMAL BOILING POINT, DENSITY-LIQUID (35 DEGREES K.).  
TABLE
- 144 DEWAR, J.  
ON THE BOILING POINT OF LIQUID HYDROGEN UNDER REDUCED PRESSURE.  
PROC. ROY. SOC. (LONDON) VOL. 64, 227-31 (1898)
- HYDROGEN, VAPOR PRESSURE-LIQUID (35 TO 52 DEGREES K.); NORMAL BOILING  
POINT, CRITICAL PRESSURE AND TEMPERATURE, EQUATION FOR VAPOR PRESSURE.  
TABLE, EQUATION
- 145 DEWAR, J.  
SOLID HYDROGEN.  
NATURE VOL. 60, 514 (SEPT 1899)
- HYDROGEN, MELTING TEMPERATURE (16 DEGREES K.).  
TABLE (1 VALUE)
- 146 DEWAR, J.  
THE BOILING POINT OF LIQUID HYDROGEN, DETERMINED BY HYDROGEN AND  
HELIUM GAS THERMOMETERS.  
PROC. ROY. SOC. (LONDON) VOL. 68, 44-54 (1901)
- HYDROGEN, NORMAL BOILING POINT (20 DEGREES K.).  
OXYGEN, NORMAL BOILING POINT (90 DEGREES K.)  
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- 147 DEWAR, J.  
THE SPECIFIC VOLUMES OF OXYGEN AND NITROGEN VAPOUR AT THE BOILING-POINT  
OF OXYGEN.  
NATURE VOL. 65, 382 (1902)
- NITROGEN, DENSITY-VAPOR (87 AND 90 DEGREES K.).  
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- 148 DEWAR, J.  
PHYSICAL CONSTANTS AT LOW TEMPERATURES. (1) THE DENSITIES OF SOLID  
OXYGEN, NITROGEN, HYDROGEN, ETC.  
PROC. ROY. SOC. (LONDON) VOL. A73, 251-61 (1904)
- HYDROGEN, DENSITY-LIQUID (AT NORMAL BOILING POINT).  
NITROGEN, DENSITY-LIQUID (AT NORMAL BOILING POINT).  
OXYGEN, DENSITY-LIQUID (AT NORMAL BOILING POINT).  
THE REFERENCE ALSO HAS OTHER LIQUID DENSITIES AND ONE SOLID DENSITY FOR  
EACH FLUID, BUT NOT AT SATURATION.  
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- 149 DEWAR, J.  
STUDIES WITH THE LIQUID HYDROGEN AND AIR CALORIMETERS. I. SPECIFIC HEATS.  
PROC. ROY. SOC. (LONDON) VOL. A76, 325-40 (1905)  
  
HYDROGEN, HEAT OF VAPORIZATION (20 DEGREES K.).  
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- 150 DEWAR, J.  
PRODUCTION OF SOLID OXYGEN BY THE EVAPORATION OF THE LIQUID.  
PROC. ROY. SOC. VOL. 85A, 589-597 (1911)  
  
OXYGEN, MELTING POINT (SEE ADDED NOTE AT END OF PAPER REGARDING TEMPERATURE).  
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- 151 DIN, F.  
THE LIQUID-VAPOUR EQUILIBRIUM OF THE BINARY SYSTEM ARGON-OXYGEN.  
BULL. INST. INTERN. FROID. VOL. 33, 17-30 (1953)  
  
ARGON, VAPOR PRESSURE-LIQUID (90 TO 110 DEGREES K.).  
OXYGEN, VAPOR PRESSURE-LIQUID (90 TO 110 DEGREES K.).  
AN EQUATION IS GIVEN FOR THE VAPOR PRESSURE OF ARGON-OXYGEN MIXTURES WITH CONSTANTS FOR 0 TO 100 PER CENT OXYGEN COMPOSITION.  
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- 152 DOBBS, E. R., FIGGINS, B. F., HEASTIE, R., JONES, G. O. AND WALKER, P. A.  
PROPERTIES OF THE CONDENSED INERT GASES.  
P. 516-8 IN LOW TEMPERATURE PHYSICS AND CHEMISTRY, PROC. 5TH INTERN. CONF. ON LOW TEMP. PHYS. AND CHEM., MADISON, WISC., 1957, UNIVERSITY OF WISCONSIN PRESS, MADISON (1958)  
  
ARGON, DENSITY-SOLID (20 TO 80 DEGREES K.).  
GRAPHICAL DATA ONLY
- 153 DOBBS, E. R., FIGGINS, B. F., JONES, G. O., PIERCEY, D. C., RILEY, D. P.  
DENSITY AND EXPANSIVITY OF SOLID ARGON.  
NATURE VOL. 178, 483 (1956)  
  
ARGON, DENSITY-SOLID (20 TO 84 DEGREES K.).  
TABLE, GRAPH
- 154 DODGE, B. F. AND DAVIS, H. N.  
VAPOR PRESSURE OF LIQUID OXYGEN AND NITROGEN.  
J. AM. CHEM. SOC. VOL. 49, 610-20 (1927)  
  
NITROGEN, VAPOR PRESSURE-LIQUID (76 TO 122 DEGREES K.).  
OXYGEN, VAPOR PRESSURE-LIQUID (77 TO 134 DEGREES K.).  
EQUATIONS ARE GIVEN FOR THE VAPOR PRESSURE OF THE TWO FLUIDS FROM TRIPLE POINT TO CRITICAL POINT.  
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- 155 DOKOUPIL, Z., VAN SOEST, G. AND SWENKER, M. D. P.  
ON THE EQUILIBRIUM BETWEEN THE SOLID PHASE AND THE GAS PHASE OF THE  
SYSTEMS HYDROGEN-NITROGEN, HYDROGEN-CARBON MONOXIDE AND  
HYDROGEN-NITROGEN-CARBON MONOXIDE.  
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TRANSLATION FROM BULL. INST. INTERN. FROID ANNEXE 1955-2, 61-72 (1954)
- NITROGEN, VAPOR PRESSURE-SOLID (42 TO 60 DEGREES K.).  
TABLE
- 156 DOKOUPIL, Z., VAN SOEST, G., WANSINK, D. H. N. AND KAPADNIS, D. G.  
SPECIFIC HEATS OF PURE HELIUM-4 AND OF A MIXTURE OF HELIUM-4 WITH 2.50  
PERCENT OF HELIUM-3 BETWEEN 1 AND 2.3 DEGREES K.  
COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 298A (1954)  
ALSO IN PHYSICA VOL. 20, 1181 (1954)
- HELIUM-4, HEAT CAPACITY-LIQUID (1.0 TO 2.3 DEGREES K.).  
TABLE, GRAPH
- 157 DRUGMAN, J. AND RAMSAY, W.  
SPECIFIC GRAVITIES OF THE HALOGENS AT THEIR BOILING POINTS, AND OF OXYGEN  
AND NITROGEN.  
J. CHEM. SOC. (LONDON) VOL. 77, 1228-33 (1900)
- FLUORINE, DENSITY-LIQUID (86 DEGREES K.).  
NITROGEN, DENSITY-LIQUID (77 DEGREES K.).  
OXYGEN, DENSITY-LIQUID (89 DEGREES K.).  
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- 158 DUGDALE, J. S. AND SIMON, F. E.  
THERMODYNAMIC PROPERTIES AND MELTING OF SOLID HELIUM.  
PROC. ROY. SOC. (LONDON) VOL. A218, 291-310 (1953)
- HELIUM, HEAT CAPACITY-SOLID (4 TO 23 DEGREES K.), MELTING PRESSURES (4 TO  
12 DEGREES K.), DENSITY-SOLID (4 TO 23 DEGREES K.), DENSITY-FLUID (5 TO  
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- 159 DUNN, L. G. AND MILLIKAN, C. B.  
PHYSICAL PROPERTIES OF LIQUID FLUORINE IN RESEARCH AND DEVELOPMENT  
ACTIVITIES AT THE JET PROPULSION LABORATORY.  
JET PROPULSION LAB., CALIF. INST. TECHNOL., PASADENA, COMBINED  
BI-MONTHLY SUMMARY NO. 29 (MAY 1952) CONTR. NO. AF W535 AC-20260  
DDC ATI 151 292
- FLUORINE, DENSITY-LIQUID (65 TO 85 DEGREES K.).  
GRAPHICAL DATA ONLY
- 160 DUPRE, A., VAN IFFERBEEK, A., AND BRANDT, G.  
ON THE INCREASE OF THE BOILING TEMPERATURE OF LIQUID OXYGEN IN A MAGNETIC  
FIELD.  
PHYSICA VOL. 28, 353-6 (1962)
- OXYGEN, NORMAL BOILING POINT (VARIATION OF THE BOILING POINT IN A  
MAGNETIC FIELD, FIELD STRENGTH VARIED FROM 0 TO 28 KG.).  
GRAPHICAL DATA ONLY

- 161 DURIEUX, M.  
THERMOMETRY AT LIQUID HELIUM AND LIQUID HYDROGEN TEMPERATURES.  
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HELIUM-4, LAMBDA TRANSITION  
GRAPH
- 162 EDESKUTY, F. J. AND SHERMAN, R. H.  
P-V-T RELATIONS OF LIQUID HELIUM-3 AND HELIUM-4.  
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HELIUM-3, DENSITY-LIQUID (1.2 TO 4.0 DEGREES K.), EQUATION FOR MELTING  
PRESSURE (1 TO 3 DEGREES K.).  
HELIUM-4, DENSITY-LIQUID (1.2 TO 4.0 DEGREES K.).  
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- 163 EDWARDS, D. O., MC WILLIAMS, A. S., AND DAUNT, J. G.  
LATTICE IMPERFECTIONS, ISOTOPIC ORDERING AND NUCLEAR SPIN INTERACTION IN  
SOLID HELIUM AS SHOWN BY SPECIFIC HEAT MEASUREMENTS.  
PHYS. LETTERS VOL. 1, NO. 6, 218-20 (1962)  
  
HELIUM-3, HEAT CAPACITY-SOLID ALPHA (0.06 TO 0.09 DEGREES K.).  
EQUATION, GRAPH
- 164 EDWARDS, J. W. AND KINGTON, G. L.  
LOW TEMPERATURE ADIABATIC CALORIMETER, AND THE HEAT CAPACITY OF ALPHA  
ALUMINA.  
TRANS. FARADAY SOC. VOL. 58, 1313-22 (1962)  
  
OXYGEN, VAPOR PRESSURE-LIQUID (67 TO 90 DEGREES K.).  
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- 165 EDWARDS, M. H. AND WOODBURY, W. C.  
COMPRESSIBILITY OF LIQUID HELIUM-4.  
CAN. J. PHYS. VOL. 39, 1833-41 (1961)  
  
HELIUM-4, DENSITY-LIQUID (3 TO 5 DEGREES K.). THE DENSITY WAS CALCULATED  
FROM EXPERIMENTAL REFRACTIVE INDEX DATA BY MEANS OF THE LORENZ-LORENTZ  
RELATION.  
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- 166 EDWARDS, M. H. AND WOODBURY, W. C.  
SATURATED HELIUM-4 NEAR ITS CRITICAL TEMPERATURE.  
PHYS. REV. VOL. 129, NO. 5, 1911-18 (1963)  
  
HELIUM-4, DENSITY-LIQUID (4.2 TO 5.2 DEGREES K.), DENSITY-VAPOR (4.2 TO  
5.2 DEGREES K.), EXTRAPOLATED VALUE FOR CRITICAL DENSITY. THE DENSITY WAS  
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LORENZ-LORENTZ RELATION.  
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- 167 ELVERUM, G. W. AND DOESCHER, R. N.  
THE MEASUREMENT OF VISCOSITY, DENSITY, AND SURFACE TENSION OF LIQUID FLUORINE.  
JET PROPULSION LAB., CALIF. INST. OF TECH., PASADENA, 'PROGRESS REPT. NO. 20-174 (MAY 1952) 8 P.  
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FLUORINE, DENSITY-LIQUID (65 TO 85 DEGREES K.), NORMAL BOILING POINT.  
TABLE, GRAPH
- 168 ELVERUM, G. W., AND DOESCHER, R. N.  
PHYSICAL PROPERTIES OF LIQUID FLUORINE.  
J. CHEM. PHYS. VOL. 20, 1834-36 (1952)  
  
FLUORINE, DENSITY-LIQUID (65 TO 85 DEGREES K.).  
TABLE, GRAPH
- 169 EMEL'IANOVA, T. I., STRAKHOV, B. V., AND LEBEDEV, V. P.  
DENSITY OF LIQUID OZONE.  
AM. ROCKET SOC. J. VOL. 31, NO. 9, 1350 (1961)  
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OXYGEN, DENSITY-LIQUID (78 DEGREES K.).  
TABLE (1 VALUE)
- 170 ERICKSON, R. A. AND ROBERTS, L. D.  
MEASUREMENT AND THE CALCULATION OF THE LIQUID HELIUM VAPOR PRESSURE-TEMPERATURE SCALE FROM 1 TO 4.2 DEGREES K.  
PHYS. REV. VOL. 93, 957-62 (1954)  
  
HELIUM-4, VAPOR PRESSURE-LIQUID (1 TO 4 DEGREES K.).  
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- 171 ESEL'SON, B. N. AND LAZAREV, B. G.  
SOLIDIFICATION OF MIXTURES OF HELIUM ISOTOPES.  
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HELIUM-4, MELTING PRESSURE (1.5 TO 2.3 DEGREES K.).  
GRAPHICAL DATA ONLY  
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- 172 ESTREICHER, M. T.  
UBER DIE VERDAMPFUNGSWARME VON SAUERSTOFF UND SCHWEFELDIOXYD.  
(ON THE HEATS OF VAPORIZATION OF OXYGEN AND SULFUR DIOXIDE.)  
BULL. INTERN. ACAD. SCI. CRACOVIE, CLASSE SCI. MATH. MET., NO. 3, 183-96 (1904)  
  
OXYGEN, HEAT OF VAPORIZATION (NEAR BOILING POINT).  
TABLE (1 VALUE)  
GERMAN
- 173 ESTREICHER, T.  
ON THE PRESSURES OF SATURATION OF OXYGEN  
PHIL. MAG. (5) VOL. 50, 454-463 (1895)  
  
OXYGEN, VAPOR PRESSURE-LIQUID (63 TO 91 DEGREES K.).  
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- 174 ESTREICHER, T. AND BOBOTEK, J.  
ZUR KENNTNIS DES VERHALTENS VON KOHLENOXYD BEI NIEDRIGEN TEMPERATUREN.  
(CONCERNING INFORMATION ON THE BEHAVIOR OF CARBON MONOXIDE AT LOW  
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BULL. INTERN. ACAD. SCI. CRACOVIE 451-61 (1913)
- CARBON MONOXIDE, VAPOR PRESSURE-LIQUID (67 TO 83 DEGREES K.), TRIPLE  
POINT.  
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- 175 EUCKEN, A.  
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- 219 GRILLY, E. R., SYDORIAK, S. G. AND MILLS, R. L.  
 ANOMALIES IN P-V-T RELATIONS FOR HELIUM-3 NEAR ITS MELTING CURVE.  
 P. 121-5 IN PROC. SYMP. LIQUID SOLID HELIUM THREE, 2 ND, COLUMBUS, OHIO (AUG 23-25, 1960)
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 EQUATION, GRAPH
- 220 GROTH, W., IHLE, H. AND MURRENHOF, A.  
 BESTIMMUNG DER TEMPERATURABHANGIGKEIT DER DAMPFDRECKVERHALTNISSE.  
 (DETERMINATION OF THE TEMPERATURE DEPENDENCE OF THE VAPOR PRESSURE RELATIONS.)  
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 TABLE, EQUATION  
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- 221 GROTH, W., IHLE, H. AND MURRENHOF, A.  
BESTIMMUNG DES DAMPFDRUCKVERHALTNISSES DER ISOTOPEN SAUERSTOFF-16 ZU  
SAUERSTOFF-18 ZWISCHEN 63 UND 74 GRAD K.  
(DETERMINATION OF THE VAPOR PRESSURE RATIO OF THE ISOTOPES OXYGEN-16 TO  
OXYGEN-18 BETWEEN 63 AND 74 DEGREES K.)  
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DATA IS IN THE FORM OF THE RATIO OF PRESSURES OF O16O16 TO O16O18,  
EQUATION FOR VAPOR PRESSURE RATIO.  
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- 222 GUTHRIE, G. L.  
THE VAPOR PRESSURE OF SOLID HYDROGEN IN THE TEMPERATURE RANGE FROM 4.7  
DEGREES K. TO 11.1 DEGREES K.  
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DEGREES K.), EQUATION FOR SOLID VAPOR PRESSURE.  
TABLE, GRAPH
- 223 HEASTIE, R. AND LEFEBVRE, C.  
PHASE EQUILIBRIA IN CONDENSED MIXTURES OF ARGON AND XENON.  
PROC. PHYS. SOC. (LONDON) VOL. 76, 180-84 (1960)
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(84 DEGREES K.).  
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- 224 HELTEMES, E. C.  
THE HEAT CAPACITY OF SOLID HELIUM-3 UNDER PRESSURE.  
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BETA) (2.7 TO 19 DEGREES K.), HEAT CAPACITY-SOLID ALPHA (0.2 TO 2.0  
DEGREES K.) AND SOLID BETA (0.4 TO 2.0 DEGREES K.).  
TABLE, GRAPH, EQUATION
- 225 HELTEMES, E. C. AND SWENSON, C. A.  
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- HELIUM-3, HEAT CAPACITY-SOLID ALPHA (0.3 TO 2 DEGREES K.).  
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- 226 HELTEMES, E. C. AND SWENSON, C. A.  
HEAT CAPACITY OF SOLID HELIUM-3.  
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- HELIUM-3, HEAT CAPACITY-SOLID ALPHA (0.7 TO 2.5 DEGREES K.), SOLID BETA  
(3 TO 16 DEGREES K.).  
HELIUM-4, HEAT CAPACITY-SOLID (2 TO 18 DEGREES K.).  
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- 227 HENNING, F.  
DIE FIXIERUNG DER TEMPERATURSKALA ZWISCHEN 0 UND -193 GRAD.  
(THE FIXED POINTS OF THE TEMPERATURE SCALE BETWEEN 0 AND -193 DEGREES.)  
ANN. PHYSIK VOL. 43, 282-94 (1914)
- OXYGEN, VAPOR PRESSURE-LIQUID (88 TO 90 DEGREES K.), NORMAL BOILING POINT  
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- 228 HENNING, F.  
TENSIONS- UND WIDERSTANDSTHERMOMETER IM TEMPERATUR-GEBIET DES  
VERFLUSSIGTEN STICKSTOFFS UND WASSERSTOFFS.  
(VAPOR PRESSURE AND RESISTANCE THERMOMETER IN THE TEMPERATURE REGION OF  
LIQUID NITROGEN AND HYDROGEN.)  
Z. PHYSIK VOL. 40, 775-85 (1926)
- NITROGEN, VAPOR PRESSURE-SOLID (61 TO 63 DEGREES K.) AND LIQUID (61 TO  
79 DEGREES K.), TRIPLE POINT, EQUATION FOR LIQUID VAPOR PRESSURE.  
HYDROGEN, VAPOR PRESSURE-LIQUID (14 TO 20 DEGREES K.), TRIPLE POINT,  
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TABLE, EQUATION  
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- 229 HENNING, F. AND HEUSE, W.  
EINE NEUE BESTIMMUNG DER NORMALEN SIEDEPUNKTE VON SAUERSTOFF, STICKSTOFF,  
UND WASSERSTOFF.  
(A NEW DETERMINATION OF THE NORMAL BOILING POINT OF OXYGEN, NITROGEN, AND  
HYDROGEN.)  
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VAPOR PRESSURE.  
NITROGEN, VAPOR PRESSURE-LIQUID (68 TO 78 DEGREES K.). EQUATION FOR  
LIQUID VAPOR PRESSURE.  
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- 230 HENNING, F. AND OTTO, J.  
DAMPFDRUCKKURVEN UND FIXPUNKTE IM TEMPERATURGEBIET VON 14 GRAD BIS 90  
GRAD ABS.  
(VAPOR PRESSURE CURVES AND FIXED POINTS IN THE TEMPERATURE RANGE FROM 14  
DEGREES TO 90 DEGREES ABSOLUTE.)  
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TEMPERATURE AND PRESSURE, NORMAL BOILING POINT, EQUATION FOR LIQUID VAPOR  
PRESSURE.  
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NITROGEN, VAPOR PRESSURE-LIQUID (22 TO 24 DEGREES K.), TRIPLE POINT  
TEMPERATURE AND PRESSURE, NORMAL BOILING POINT, EQUATION FOR LIQUID VAPOR  
PRESSURE.  
OXYGEN, VAPOR PRESSURE-LIQUID (67 TO 90 DEGREES K.), TRIPLE POINT  
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- 231 HENNING, F. AND STOCK, A.  
 UBER DIE SATTIGUNGSDRUCKE EINIGER DAMPFE ZWISCHEN +10 UND -181 GRAD.  
 (THE SATURATION PRESSURE OF SOME VAPORS BETWEEN +10 AND -181 DEGREES.)  
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- METHANE, VAPOR PRESSURE-LIQUID (91 TO 111 DEGREES K.) AND SOLID (80 TO 86 DEGREES K.), NORMAL BOILING POINT, EQUATION FOR SOLID AND LIQUID VAPOR PRESSURE.  
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- 232 HERCUS, G. R. AND WILKS, J.  
 THE SPECIFIC HEAT OF LIQUID HELIUM II AS A FUNCTION OF PRESSURE.  
 PHIL. MAG. VOL. 45, 1163-72 (1954)
- HELIUM-4, HEAT CAPACITY-LIQUID (1.4 TO 2.0 DEGREES K.).  
 TABLE, GRAPH
- 233 HERZBERG, F.  
 EFFECTIVE DENSITY OF BOILING LIQUID OXYGEN.  
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- OXYGEN, BULK DENSITY-LIQUID (TEMPERATURE NOT MEASURED), DENSITY PLOTTED AGAINST VAPOR PRESSURE WHICH VARIED FROM 15 TO 28 PSIA.  
 GRAPHICAL DATA ONLY
- 234 HESTERMANS, P. AND WHITE, D.  
 THE VAPOR PRESSURE, HEAT OF VAPORIZATION AND HEAT CAPACITY OF METHANE FROM THE BOILING POINT TO THE CRITICAL TEMPERATURE.  
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- METHANE, VAPOR PRESSURE-LIQUID (110 TO 190 DEGREES K.), HEAT CAPACITY-LIQUID (115 TO 187 DEGREES K.), HEAT OF VAPORIZATION (112 TO 185 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
 TABLE, EQUATION
- 235 HEUSE, W.  
 MOLVOLUMEN VON KOHLENWASSERSTOFFEN UND EINIGEN ANDEREN VERBINDUNGEN BEI TIEFER TEMPERATUR.  
 (MOLECULAR VOLUME OF HYDROCARBONS AND OTHER COMPOUNDS AT LOW TEMPERATURES.)  
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- METHANE, DENSITY-SOLID (20.4 DEGREES K.)  
 ONE TABULAR VALUE  
 GERMAN
- 236 HEUSE, W. AND OTTO, J.  
 EINE NEUE GASTHERMOMETRISCHE BESTIMMUNG VON FIXPUNKTEN UNTERHALB 0 GRAD IN VERBINDUNG MIT TENSIONS- UND WIDERSTANDSTHERMOMETERN.  
 (A NEW GAS THERMOMETER DETERMINATION OF SOME FIXED POINTS BELOW 0 DEGREES IN CONNECTION WITH VAPOR PRESSURE AND RESISTANCE THERMOMETERS.)  
 ANN. PHYSIK (5) VOL. 9, 486-504 (1931)
- HYDROGEN, VAPOR PRESSURE-LIQUID (20.3 TO 20.5 DEGREES K.).  
 OXYGEN, VAPOR PRESSURE-LIQUID (89.8 TO 90.6 DEGREES K.).  
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- 237 HEUSE, W. AND OTTO, J.  
 GASTHERMOMETRISCHE BESTIMMUNG EINIGER FIXPUNKTE UNTERHALB 0 GRAD MIT  
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 (GAS THERMOMETER DETERMINATIONS OF SOME FIXED POINTS BELOW 0 DEGREES WITH  
 VAPOR PRESSURE AND RESISTANCE THERMOMETERS. II.)  
 ANN. PHYSIK VOL. 14, 185-92 (1932)
- CARBON MONOXIDE, VAPOR PRESSURE-LIQUID (78.1 TO 81.7 DEGREES K.).  
 NITROGEN, VAPOR PRESSURE-LIQUID (77.3 TO 77.8 DEGREES K.).  
 OXYGEN, VAPOR PRESSURE-LIQUID (89.7 TO 90.2 DEGREES K.).  
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- 238 HILL, R. W. AND LOUNASMAA, O. V.  
 THE SPECIFIC HEAT OF LIQUID HELIUM.  
 PHIL. MAG. VOL. 2, 143-8 (1957)
- HELIUM, HEAT CAPACITY-LIQUID (1.8 TO 5.0 DEGREES K.).  
 TABLE, GRAPH
- 239 HILL, R. W. AND LOUNASMAA, O. V.  
 THE LATTICE SPECIFIC HEATS OF SOLID HYDROGEN AND DEUTERIUM.  
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- PARAHYDROGEN, HEAT CAPACITY-SOLID (2.5 TO 9 DEGREES K.), EQUATION FOR  
 SOLID HEAT CAPACITY.  
 DEUTERIUM(ORTHO), HEAT CAPACITY-SOLID (2 TO 10 DEGREES K.).  
 TABLE, EQUATION, GRAPH
- 240 HILL, R. W. AND RICKETSON, B. W. A.  
 XXXI. A LAMBDA-ANOMALY IN THE SPECIFIC HEAT OF SOLID HYDROGEN.  
 PHIL. MAG. VOL. 45, 277-82 (1954)
- HYDROGEN (ORTHO-PARA MIXTURES, ORTHO CONCENTRATIONS VARY FROM 0.5 TO  
 74 PERCENT), HEAT CAPACITY-SOLID (2 TO 12 DEGREES K.).  
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- 241 HILL, R. W., RICKETSON, B. W. A. AND SIMON, F.  
 A LAMBDA-ANOMALY IN THE SPECIFIC HEAT OF HYDROGEN.  
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- HYDROGEN (ORTHO-PARA MIXTURE), HEAT CAPACITY-SOLID (0.7 TO 2 DEGREES K.).  
 NO DATA - QUALITATIVE DISCUSSION OF EXPERIMENTAL RESULTS.
- 242 HOGE, H. J.  
 VAPOR PRESSURE AND FIXED POINTS OF OXYGEN AND HEAT CAPACITY IN THE  
 CRITICAL REGION.  
 J. RESEARCH NATL. BUR. STANDARDS VOL. 44, 321-45 (1950)
- OXYGEN, VAPOR PRESSURE-LIQUID (54 TO 155 DEGREES K.) AND SOLID (51 TO  
 54 DEGREES K.), SOLID-SOLID TRANSITION (SOLID III TO SOLID II, 23.9  
 DEGREES K. AND SOLID II TO SOLID I, 43.8 DEGREES K.), TRIPLE POINT,  
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- 243 HOGE, H. J. AND ARNOLD, R. D.  
VAPOR PRESSURES OF HYDROGEN, DEUTERIUM, AND HYDROGEN DEUTERIDE AND DEW-  
POINT PRESSURES OF THEIR MIXTURES.  
J. RESEARCH NATL. BUR. STANDARDS VOL. 47, 63-74 (1951) RP 2228
- HYDROGEN (20.4 DEGREE K. EQUILIBRIUM), VAPOR PRESSURE-LIQUID (17 TO 33  
DEGREES K.), NORMAL BOILING POINT.  
DEUTERIUM (NORMAL), VAPOR PRESSURE-LIQUID (21 TO 34 DEGREES K.).  
DEUTERIUM (20.4 DEGREE K. EQUILIBRIUM), VAPOR PRESSURE-LIQUID (19 TO 38  
DEGREES K.), NORMAL BOILING POINT, TRIPLE POINT.  
HYDROGEN DEUTERIDE, VAPOR PRESSURE-LIQUID (17 TO 35 DEGREES K.), NORMAL  
BOILING POINT, TRIPLE POINT, EQUATION FOR LIQUID VAPOR PRESSURE.  
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- 244 HOGE, H. J., AND LASSITER, J. W.  
CRITICAL TEMPERATURES, PRESSURES, AND VOLUMES OF HYDROGEN, DEUTERIUM, AND  
HYDROGEN DEUTERIDE.  
J. RESEARCH NATL. BUR. STANDARDS VOL. 47, 75-9 (1951)
- HYDROGEN (20.4 DEGREE K. EQUILIBRIUM), VAPOR PRESSURE-LIQUID (32 TO 33  
DEGREES K.), DENSITY-LIQUID (32 TO 33 DEGREES K.), CRITICAL TEMPERATURE,  
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DEUTERIUM (20.4 DEGREE K. EQUILIBRIUM), VAPOR PRESSURE-LIQUID (37 TO 41  
DEGREES K.), DENSITY-LIQUID (37 TO 41 DEGREES K.), CRITICAL TEMPERATURE,  
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HYDROGEN DEUTERIDE (20.4 DEGREE K. EQUILIBRIUM), VAPOR PRESSURE-LIQUID  
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TABLE, GRAPH
- 245 HOLLAND, F. A., HUGGILL, J. A. W. AND JONES, G. O.  
THE SOLID-FLUID EQUILIBRIUM OF HELIUM ABOVE 5000 ATM. PRESSURE.  
PROC. ROY. SOC. (LONDON) VOL. A207, 268-77 (1951)
- HELIUM, MELTING PRESSURE (30 TO 50 DEGREES K.), EQUATION FOR MELTING  
PRESSURE FROM 2.4 TO 50 DEGREES K.  
EXTENDED VERSION OF 246 BELOW.  
EQUATION, GRAPH
- 246 HOLLAND, F. A., HUGGILL, J. A. W., JONES, G. O. AND SIMON, F. E.  
SOLID HELIUM AT 'HIGH' TEMPERATURES.  
NATURE VOL. 165, 147-8 (1950)
- HELIUM, MELTING PRESSURE (30 TO 50 DEGREES K.).  
SHORT VERSION OF 245 ABOVE.  
EQUATION, GRAPH
- 247 HOLST, G.  
ON THE MEASUREMENT OF VERY LOW TEMPERATURES. XXVI. THE VAPOUR-PRESSURES  
OF OXYGEN AND NITROGEN ACCORDING TO THE PRESSURE-MEASUREMENTS BY V.  
SIEMENS AND THE TEMPERATURE-DETERMINATIONS BY KAMERLINGH ONNES C. S.  
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NITROGEN, VAPOR PRESSURE-LIQUID (57 TO 80 DEGREES K.).  
THIS IS NOT ORIGINAL DATA BUT CORRECTS VAPOR PRESSURE DATA OF 485 BY VON  
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- 248 HOLST, G. AND HAMBURGER, L.  
 INVESTIGATION OF THE EQUILIBRIUM LIQUID-VAPOUR OF THE SYSTEM ARGON-NITROGEN.  
 PROC. AKAD. WETENSCHAPPEN VOL. 18, 872-94 (1916)  
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- OXYGEN, VAPOR PRESSURE-LIQUID (78 TO 83 DEGREES K.).  
 NITROGEN, VAPOR PRESSURE-LIQUID (69 TO 81 DEGREES K.).  
 ARGON, VAPOR PRESSURE-LIQUID (84 TO 90 DEGREES K.), TRIPLE POINT.  
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- 249 HU, J.H., WHITE, D. AND JOHNSTON, H. L.  
 CONDENSED GAS CALORIMETRY. V. HEAT CAPACITIES, LATENT HEATS AND ENTROPIES OF FLUORINE FROM 13 TO 85 DEGREES K., HEATS OF TRANSITION, FUSION, VAPORIZATION AND VAPOR PRESSURES OF THE LIQUID.  
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 TABLE
- 250 HULL, R. A., WILKINSON, K. R. AND WILKS, J.  
 THE SPECIFIC HEAT OF LIQUID HELIUM AT TEMPERATURES BETWEEN 0.6 AND 1.6 DEGREES K.  
 PROC. PHYS. SOC. (LONDON) VOL. 64A, 379-88 (1951)
- HELIUM, HEAT CAPACITY-LIQUID (0.4 TO 1.6 DEGREES K.).  
 TABLE, GRAPH
- 251 HUNTER, M. A.  
 THE MOLECULAR AGGREGATION OF LIQUEFIED GASES.  
 J. PHYS. CHEM. VOL. 10, 330-60 (1906)
- METHANE, VAPOR PRESSURE-SOLID (80 TO 88 DEGREES K.) AND LIQUID (96 TO 110 DEGREES K.) EQUATION FOR SOLID AND LIQUID VAPOR PRESSURE. THE MEASURED VALUES FOR SOLID VAPOR PRESSURE ARE NOT GIVEN, BUT VALUES ARE CALCULATED USING AN EMPIRICAL EQUATION. NORMAL BOILING AND MELTING POINTS ARE ESTIMATED.  
 TABLE, EQUATION
- 252 INGLIS, J. K. H. AND COATES, J. E.  
 THE DENSITIES OF LIQUID NITROGEN AND LIQUID OXYGEN AND THEIR MIXTURES.  
 J. CHEM. SOC. (LONDON) VOL. 89, 886-9 (1906)
- OXYGEN, DENSITY-LIQUID (75 AND 79 DEGREES K.).  
 NITROGEN, DENSITY-LIQUID (75 AND 79 DEGREES K.).  
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- 253 JARRY, R. L.  
STUDIES OF THE PROPERTIES OF LIQUID FLUORINE, NITROGEN TRIFLUORIDE AND  
PECHLORYL FLUORIDE.  
PENN. SALT MFG. CO., WYNDMOOR, PA., REPT. NO. AFOSR TR-56-50  
(DEC 1956)  
ASTIA AD 110 311
- FLUORINE, DENSITY-LIQUID (67 TO 103 DEGREES K.), EQUATION FOR LIQUID  
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TABLE, EQUATION
- 254 JARRY, R. L. AND MILLER, H. C.  
THE DENSITY OF LIQUID FLUORINE BETWEEN 67 AND 103 DEGREES K.  
J. AM. CHEM. SOC. VOL. 78, 1552-3 (1956)  
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ASTIA AD 77 193
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DENSITY, APPEARS TO BE THE SAME AS NUMBER 253 ABOVE.  
TABLE, EQUATION
- 255 JOHNS, T. F.  
VAPOUR PRESSURE RATIO OF  $^{12}\text{C}^{16}\text{O}$  AND  $^{13}\text{C}^{16}\text{O}$ .  
PROC. PHYS. SOC. VOL. 66, 808-09 (1953)
- CARBON MONOXIDE (VARIOUS ISOTOPIC MIXTURES), VAPOR PRESSURE-LIQUID (66 TO  
77 DEGREES K.) AND SOLID BETA (62 TO 66 DEGREES K.), EQUATIONS FOR LIQUID  
AND SOLID VAPOR PRESSURE. THE GRAPH OF P VS. T SHOWS MELTING POINT AND  
SOLID ALPHA AND BETA TRANSITIONS FOR VARIOUS MIXTURES. A MORE COMPLETE  
DESCRIPTION OF THIS WORK IS PRESENTED IN NUMBER 256 BELOW.  
GRAPH, EQUATION
- 256 JOHNS, T. F.  
VAPOUR PRESSURE DIFFERENCES BETWEEN SOME OF THE ISOTOPIC SPECIES OF  
CARBON MONOXIDE, METHANE AND OXYGEN.  
ATOMIC ENERGY RESEARCH ESTAB. (GT. BRIT.) GP/R-2166 53PP. (1957)  
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- CARBON MONOXIDE (VARIOUS ISOTOPIC MIXTURES), VAPOR PRESSURE DIFFERENCES-  
LIQUID (68 TO 81 DEGREES K.) AND SOLID (61 TO 68 DEGREES K.), MELTING  
PRESSURE (68 DEGREES K.), TRANSITION TEMPERATURE-SOLID ALPHA TO SOLID  
BETA (61 DEGREES K.), EQUATIONS FOR LIQUID AND SOLID VAPOR PRESSURE.  
METHANE (VARIOUS ISOTOPIC MIXTURES), VAPOR PRESSURE DIFFERENCES-LIQUID  
(91 TO 105 DEGREES K.) AND SOLID (81 TO 91 DEGREES K.), MELTING PRESSURE  
(91 DEGREES K.), EQUATIONS FOR LIQUID AND SOLID VAPOR PRESSURE.  
OXYGEN (VARIOUS ISOTOPIC MIXTURES), VAPOR PRESSURE DIFFERENCES-LIQUID  
(65 TO 89 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
NO TEMPERATURE MEASUREMENTS WERE MADE. TEMPERATURE WAS DEDUCED FROM  
KNOWN P-T RELATIONS FOR REFERENCE SAMPLE.  
TABLE, GRAPH
- 257 JOHNS, T. F.  
VAPOUR PRESSURE RATIOS OF NITROGEN (ISOTOPES 14 AND 15).  
PROC. PHYS. SOC. (LONDON) VOL. 71, 701-3 (1958)
- NITROGEN (ISOTOPES 14 AND 15), VAPOR PRESSURE (NO TEMPERATURE GIVEN).  
VAPOR PRESSURE DIFFERENCE BETWEEN ISOTOPIC VARIATIONS AND A REFERENCE  
SAMPLE.  
GRAPHICAL DATA ONLY

- 258 JOHNSTON, H. L., CLARKE, J. T., RIFKIN, E. B. AND KERR, E. C.  
CONDENSED GAS CALORIMETRY. I. HEAT CAPACITIES, LATENT HEATS, AND  
ENTROPIES OF PURE PARA-HYDROGEN FROM 12.7 TO 20.3 DEGREES K. DESCRIPTION  
OF THE CONDENSED GAS CALORIMETER IN USE IN THE CRYOGENIC LABORATORY OF  
THE OHIO STATE UNIVERSITY.  
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- PARAHYDROGEN, HEAT CAPACITY-SOLID (13 TO 14 DEGREES K.) AND LIQUID (14 TO  
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- 259 JONES, G. O. AND WALKER, P. A.  
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PHYSIQUE DES BASSES TEMPERATURE, PARIS. SEPT. 2-8, 1955)
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- 260 JONES, G. O. AND WALKER, P. A.  
SPECIFIC HEATS OF FLUID ARGON NEAR THE CRITICAL POINT.  
PROC. PHYS. SOC. (LONDON) VOL. B69, 1348-9 (1956)
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- 261 JONES, M. L.  
THERMODYNAMIC PROPERTIES OF METHANE AND NITROGEN AT LOW TEMPERATURES  
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MICHIGAN UNIV., ANN ARBOR, PH. D. THESIS (1962) 182 P.
- METHANE, HEAT CAPACITY-LIQUID (160 TO 190 DEGREES K.), HEAT OF  
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- 262 JORDAN, T. H., STREIB, W. E., SMITH, G. W. AND LIPSCOMB, W. H.  
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- FLUORINE, SOLID-SOLID TRANSITION (ALPHA TO BETA) (45.5 DEGREES K.).  
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ANN. PHYSIK VOL. 10, 983-92 (1931)
- NITROGEN, TRIPLE POINT.  
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- 264 KAISCHEW, R. AND SIMON, F.  
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NATURE VOL. 133, 460 (1934)
- HELIUM, DENSITY-SOLID (3.6 AND 4.0 DEGREES K.), HEAT OF FUSION (3.4 AND  
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- 265 KANDA, E.  
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BULL. CHEM. SOC. JAPAN VOL. 12, 473-9 (1937)
- OXYGEN, DENSITY-LIQUID (60 TO 88 DEGREES K.).  
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- 266 KANDA, E.  
STUDIES ON FLUORINE AT LOW TEMPERATURES. VIII. DETERMINATION OF MOLECULAR  
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- FLUORINE, HEAT CAPACITY-SOLID (15 TO 54 DEGREES K.) AND LIQUID (57 TO 83  
DEGREES K.), HEAT OF FUSION (55 DEGREES K.).  
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- 267 KARWAT, E.  
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- METHANE, VAPOR PRESSURE-SOLID (77 TO 87 DEGREES K.), EQUATION FOR SOLID  
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- 268 KEESOM, W. H.  
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COMMUN. PHYS. LAB. UNIV. LEIDEN NO. 137E (1911)  
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- HYDROGEN, HEAT OF VAPORIZATION (NO TEMPERATURE GIVEN), PRESSURE VARIED  
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- 269 KEESOM, W. H.  
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- 270 KEESOM, W. H.  
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P. 148-50 IN PROC. INTERN. CONGR. REFRIG., 7 TH, THE HAGUE-AMSTERDAM (1936)
- HELIUM, HEAT CAPACITY-SOLID AND LIQUID (2 TO 4 DEGREES K.), DENSITY-SOLID AND LIQUID (2 TO 4 DEGREES K.), HEAT OF FUSION (2.5 TO 3.5 DEGREES K.).  
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- 271 KEESOM, W. H. AND BIJL, A.  
DETERMINATION OF THE VAPOUR PRESSURES OF LIQUID NITROGEN BELOW ONE ATMOSPHERE AND OF SOLID BETA NITROGEN. BOILING POINT AND TRIPLE POINT OF NITROGEN.  
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ALSO IN PHYSICA VOL. 4, 305-10 (1937)
- NITROGEN, VAPOR PRESSURE-SOLID BETA (53 TO 63 DEGREES K.), AND LIQUID (64 TO 77 DEGREES K.), TRIPLE POINT, NORMAL BOILING POINT, EQUATIONS FOR SOLID AND LIQUID VAPOR PRESSURE.  
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ALSO IN PROC. KON. AKAD. AMSTERDAM VOL. 34, 1223 (1931)
- HYDROGEN (NORMAL), VAPOR PRESSURE-LIQUID (15 TO 20 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
PARAHYDROGEN, VAPOR PRESSURE-LIQUID (15 TO 20 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE. A SERIES OF MEASUREMENTS WERE CONDUCTED NEAR THE NORMAL BOILING POINT IN ORDER TO DETERMINE THE NORMAL BOILING POINT. THE EQUATIONS ARE EXPLICIT IN TEMPERATURE.  
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- HELIUM-4, LAMBDA TRANSITION (HE I TO HE II) (1.9 TO 2.2 DEGREES K.).  
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- 274 KEESOM, W. H. AND CLUSIUS, K.  
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- HELIUM, HEAT CAPACITY-LIQUID (1 TO 4 DEGREES K.).  
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- 275 KEESOM, W. H. AND DAMMERS, B. G.  
 ON THE CONSTRUCTION OF PLATINUM THERMOMETERS AND THE DETERMINATION OF  
 THEIR BASIC POINTS.  
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- 276 KEESOM, W. H., DE SMEDT, J. AND MOOY, H. H.  
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 COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 209D (1930)
- PARAHYDROGEN, DENSITY-SOLID (APPROXIMATELY 2 DEGREES K.), ESTIMATED FROM  
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- 277 KEESOM, W. H. AND HAANTJES, J.  
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- NEON, VAPOR PRESSURE-SOLID (15 TO 20 DEGREES K.), EQUATION FOR SOLID  
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- 278 KEESOM, W. H. AND HAANTJES, J.  
 VAPOUR PRESSURES OF NEON OF DIFFERENT ISOTOPIIC COMPOSITIONS.  
 COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN 239C (1935)  
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- NEON (VARIOUS ISOTOPIIC MIXTURES), VAPOR PRESSURE-SOLID (19 TO 24  
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- 279 KEESOM, W. H. AND KEESOM, A. P.  
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 COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 221D (1932)  
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- HELIUM-4, HEAT CAPACITY-LIQUID I (2.2 TO 3 DEGREES K.) AND LIQUID II (1.3  
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- 280 KEESOM, W. H. AND KEESOM, A. P.  
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COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 224E (1933)  
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- HELIUM-4, MELTING PRESSURE (SOLID TO LIQUID II) (1.2 TO 1.4 DEGREES K.),  
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- 281 KEESOM, W. H. AND KEESOM, A. P.  
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COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 235D (1935)  
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- HELIUM-4, LAMBDA TRANSITION (LIQUID I TO LIQUID II) (2.19 DEGREES K.),  
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- 282 KEESOM, W. H. AND KEESOM, A. P.  
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DEGREES K.), DENSITY-SOLID (2 TO 4 DEGREES K.) AND LIQUID (2 TO 4  
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ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 34, 598 (1931)
- HYDROGEN, MELTING PRESSURE (14 TO 25 DEGREES K.).  
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- 284 KEESOM, W. H. AND LISMAN, J. H. C.  
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COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 221A (1932)  
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- HYDROGEN, MELTING PRESSURE (14 TO 27 DEGREES K.).  
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- 285 KEESOM, W. H. AND LISMAN, J. H. C.  
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ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 36, 378 (1933)
- NEON, MELTING PRESSURE (25 TO 28 DEGREES K.).  
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- 286 KEESOM, W. H. AND LISMAN, J. H. C.  
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COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 232B (1934)  
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- NITROGEN, MELTING PRESSURE (63 TO 65 DEGREES K.).  
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- 287 KEESOM, W. H. AND LISMAN, J. H. C.  
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P. 151-5 IN PROC. INTERN. CONGR. REFRIG. 7TH CONG. THE HAGUE-AMSTERDAM  
(1936)
- NEON, MELTING PRESSURE (25 TO 27 DEGREES K.).  
NITROGEN, MELTING PRESSURE (64 TO 66 DEGREES K.).  
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- 288 KEESOM, W. H. AND ONNES, H. K.  
THE SPECIFIC HEAT AT LOW TEMPERATURES. III. MEASUREMENTS OF THE SPECIFIC  
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VOL. 24, 1315-23 (1916)
- NITROGEN, HEAT CAPACITY-SOLID (15 TO 62 DEGREES K) AND LIQUID (64 TO 76  
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- 289 KEESOM, W. H. AND ONNES, H. K.  
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- HYDROGEN, HEAT CAPACITY-SOLID (12 TO 13 DEGREES K.) AND LIQUID (15 TO 20  
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- 290 KEESOM, W. H. AND TACONIS, K. W.  
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COMMUNS. KAMERLINGH ONNES LAB. UNIV. LEIDEN NO. 250 E (1938)  
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- HELIUM, DENSITY-SOLID (1.45 DEGREES K.). CALCULATED FROM X-RAY  
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- 291 KEESOM, W. H., VAN DER HORST, H. AND JANSSEN, A. F. J.  
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- 292 KEESOM, W. H., WEBER, S. AND NORGAARD, G.  
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- 293 KEESOM, W. H., WEBER, S. AND SCHMIDT, G.  
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- 294 KEESOM, W. H. AND WESTMIJZE, W. K.  
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PHYSICA VOL. 8, NO. 9, 1044 (1941)  
  
HELIUM, HEAT CAPACITY-LIQUID (0.6 TO 1.5 DEGREES K.). EQUATION FOR LIQUID  
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- 295 KELLERS, C. F.  
SPECIFIC HEAT OF LIQUID HELIUM NEAR THE LAMBDA POINT.  
DUKE UNIV., DURHAM, N. CAR., PH. D. THESIS (1960) 89 P.  
  
HELIUM-4, HEAT CAPACITY-LIQUID (1.9 TO 2.35 DEGREES K.), LAMBDA  
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- 296 KERR, E. C.  
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J. AM. CHEM. SOC. VOL. 74, 824-5 (1952)  
  
DEUTERIUM (ORTHO-PARA CONCENTRATION NOT SPECIFIED), DENSITY-LIQUID (20 TO  
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- 297 KERR, E. C.  
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PHYS. REV. VOL. 96, 551-54 (1954)
- HELIUM-3, DENSITY-LIQUID (1.3 TO 3.2 DEGREES K.) AND VAPOR (1.3 TO 3.2 DEGREES K.), CRITICAL DENSITY DETERMINED BY RECTILINEAR DIAMETER. EQUATIONS FOR LIQUID AND VAPOR DENSITIES.  
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- 298 KERR, E. C.  
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J. CHEM. PHYS. VOL. 26, 511-14 (1957)
- HELIUM-4, DENSITY-LIQUID (1.2 TO 4.3 DEGREES K.), EQUATION FOR LIQUID DENSITY. INCLUDES POINTS IN BOTH HE I AND HE II REGIONS. THE CRITICAL DENSITY WAS DETERMINED BY RECTILINEAR DIAMETER.  
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- 299 KERR, E. C., RIFKIN, E. B., JOHNSTON, H. L. AND CLARKE, J. T.  
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J. AM. CHEM. SOC. VOL. 73, 282-9 (1951)
- DEUTERIUM (97.8 PERCENT ORTHO), VAPOR PRESSURE-LIQUID (19 TO 24 DEGREES K.), HEAT CAPACITY-SOLID (14 TO 18 DEGREES K.) AND LIQUID (20 TO 23 DEGREES K.), HEAT OF FUSION (18 TO 19 DEGREES K.), HEAT OF VAPORIZATION (24 DEGREES K.), TRIPLE POINT TEMPERATURE AND PRESSURE, NORMAL BOILING POINT, EQUATION FOR LIQUID VAPOR PRESSURE.  
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- 300 KERR, E. C. AND TAYLOR, R. D.  
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ANN. PHYS. (N.Y.) VOL. 20, 450-63 (1962)
- HELIUM-3, DENSITY-LIQUID (0.16 TO 1.8 DEGREES K.), EQUATION FOR LIQUID DENSITY.  
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- 301 KERR, E. C. AND TAYLOR, R. D.  
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ANN. PHYS. (N.Y.) VOL. 26, NO. 2, 292-306 (1964)
- HELIUM-4, DENSITY-LIQUID (0.05 TO 2.8 DEGREES K. INCLUDING THE LAMBDA POINT), EQUATION FOR LIQUID DENSITY.  
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- 302 KEYES, F. G., TAYLOR, R. S., AND SMITH, L. B.  
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J. MATH. PHYS. VOL. 1, 211-242 (1922)
- METHANE, VAPOR PRESSURE-LIQUID (97 TO 191 DEGREES K.), DENSITY-LIQUID (100 TO 185 DEGREES K.), CRITICAL TEMPERATURE AND PRESSURE, CRITICAL DENSITY CALCULATED BY USE OF RECTILINEAR DIAMETER, EQUATION FOR LIQUID VAPOR PRESSURE, VAPOR DENSITY CALCULATED FROM EQUATION OF STATE.  
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J. MATH. PHYS. VOL. 1, 243-312 (1922)
- OXYGEN, NORMAL BOILING POINT.  
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- 304 KIDDER, J. N.  
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P. 419-20 IN LOW TEMPERATURE PHYSICS, PROC. 8 TH INTERN. CONF. ON LOW  
TEMP. PHYS., QUEEN MARY COLLEGE, LONDON (SEPT 16-22, 1962) BUTTERWORTHS,  
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- HELIUM-4, DENSITY-SOLID (1.46 TO 1.72 DEGREES K.), DENSITY-LIQUID (1.46  
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- 305 KILNER, S. B., RANDOLPH, C. L. AND GILLESPIE, R. W.  
THE DENSITY OF LIQUID FLUORINE.  
J. AM. CHEM. SOC. VOL. 74, 1086-7 (1952)
- FLUORINE, DENSITY-LIQUID (77 DEGREES K.).  
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- 306 KIRSHENBAUM, J. AND UREY, H. C.  
THE DIFFERENCE IN THE VAPOR PRESSURES, HEATS OF VAPORIZATION, AND TRIPLE  
POINTS OF NITROGEN (14) AND NITROGEN (15) AND OF AMMONIA AND  
TRIDEUTEROAMMONIA.  
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- 307 KISTEMAKER, J.  
THE VAPOR PRESSURE OF LIQUID HELIUM FROM THE LAMBDA-POINT TO 1.3 DEGREES  
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- HELIUM, VAPOR PRESSURE-LIQUID (1.3 TO 2.1 DEGREES K.).  
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- 308 KLIPPING, G. AND MASCHER, W.  
VAKUUMERZUGUNG DURCH KONDENSATION AN TIEFGEKUHLTEN FLACHEN. II. DIE  
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(VACUUM PRODUCTION BY CONDENSATION ON LOW TEMPERATURE SURFACE. II.  
THE CONDENSATION OF NITROGEN AND HYDROGEN ON A WELL DEFINED COLD SURFACE)  
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HYDROGEN, VAPOR PRESSURE-SOLID (3.3 TO 4.5 DEGREES K.).  
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- 309 KNAAP, H. F. P., KNOESTER, M. AND BEENAKKER, J. J. M.  
THE VOLUME CHANGE ON MIXING FOR SEVERAL LIQUID SYSTEMS AND THE  
DIFFERENCE IN MOLAR VOLUME BETWEEN THE ORTHO AND PARA MODIFICATIONS OF  
THE HYDROGENIC MOLECULES.  
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- 310 KOGAN, V. S., LAZAREV, B. G. AND BULATOVA, R. F.  
THE CRYSTALLINE STRUCTURE OF HYDROGEN AND DEUTERIUM.  
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- DEUTERIUM, DENSITY-SOLID (4 DEGREES K.).  
TABLE
- 311 KOSTRIUKOVA, M. O.  
SPECIFIC HEAT OF SOLID OXYGEN BETWEEN 20 DEGREES AND 4 DEGREES K.  
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- 312 KOSTRIUKOVA, M. O. AND STRELKOV, P. G.  
SPECIFIC HEAT OF SOLID OXYGEN BELOW 4 DEGREES K.  
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TABLE, GRAPH
- 314 KRAMERS, H. C., WASSCHER, J. D. AND GORTER, C. J.  
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- 315 KRUIS, H. A., POPP, L. AND CLUSIUS, K.  
UBER UMWANDLUNGEN IN FESTEN HYDRIDEN UND DEUTERIDEN.  
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HEAT OF TRANSITION (ALPHA TO BETA), MELTING TEMPERATURE, TRIPLE POINT.  
DEUTERO-METHANE (CD<sub>4</sub>), SOLID-SOLID TRANSITION (ALPHA TO BETA) (26.3  
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- 316 KUENEN, J. P. AND CLARK, A. L.  
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TO 133 DEGREES K.) AND VAPOR (130 TO 133 DEGREES K.), CRITICAL PRESSURE  
AND DENSITY MEASURED AT BOTH THE PLAIT POINT AND POINT OF CONTACT.  
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- 317 LADENBURG, A. AND KRUGEL, C.  
UEBER DIE MESSUNG TIEFER TEMPERATUREN. II.  
(MEASUREMENT OF LOW TEMPERATURES. II.)  
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METHANE, NORMAL BOILING POINT.  
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- 318 LAHR, P. H. AND EVERSOLE, W. G.  
COMPRESSION ISOTHERMS OF ARGON, KRYPTON, AND XENON THROUGH THE FREEZING  
ZONE.  
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(137 TO 360 DEGREES K.), EQUATION FOR SOLID VAPOR PRESSURE.  
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- 319 LANGER, D. W. J.  
SOLIDIFICATION OF HELIUM AT 77 DEGREES K.  
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- HELIUM-4, VAPOR PRESSURE-SOLID (77 DEGREES K.).  
TABLE, GRAPH
- 320 LEE, D. M. AND FAIRBANK, H. A.  
DENSITY AND EXPANSION COEFFICIENT OF LIQUID HELIUM-3 BELOW 1 DEGREE K.  
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CLAUSIUS-MOSSOTTI RELATION.  
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- 321 LE PAIR, C., TACONIS, K. W., DE BRUYN OUBOTER, R. AND DAS, P.  
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- 322 LE PAIR, C., TACONIS, K. W., DE BRUYN OUBOTER, R. AND DAS, P.  
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- 323 LEVELT, J. M. H.  
MEASUREMENTS OF THE COMPRESSIBILITY OF ARGON IN THE GASEOUS AND LIQUID  
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(122 TO 153 DEGREES K.) AND VAPOR (122 TO 153 DEGREES K.), EQUATION FOR  
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- 324 LEWIS, G. N. AND HANSON, W. T.  
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(18.65 DEGREES K.).  
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(18.65 DEGREES K.). THE DATA IS OF A VERY PRELIMINARY NATURE, ACCORDING  
TO THE AUTHORS.  
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- 325 LEWIS, G. N. AND HANSON, W. T.  
THE VAPOR PRESSURE OF SOLID AND LIQUID HEAVY HYDROGEN.  
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20 DEGREES K.), TRIPLE POINT. THIS IS A BRIEF PRESENTATION OF THE  
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- 326 LEWIS, G. N. AND HANSON, W. T.  
THE VAPOR PRESSURE OF SOLID AND LIQUID DEUTERIUM AND THE HEATS OF  
SUBLIMATION, OF FUSION AND OF VAPORIZATION.  
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20 DEGREES K.), TRIPLE POINT. CALCULATED VALUES OF HEATS OF SUBLIMATION,  
VAPORIZATION AND FUSION ARE REPORTED. THESE MEASUREMENTS HAVE BEEN  
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- 327 LIBBY, W. F. AND BARTER, C. A.  
VAPOR PRESSURES OF THE TRITIUM LIQUID HYDROGENS. DEPENDENCE OF HYDROGEN  
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- 328 LISMAN, J. H. C. AND KEESOM, W. H.  
THE MELTING-CURVE OF OXYGEN.  
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- OXYGEN, MELTING PRESSURE (55 TO 56 DEGREES K.).  
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- 329 LISMAN, J. H. C. AND KEESOM, W. H.  
THE MELTING CURVE OF OXYGEN TO 170 KILOGRAMS PER SQUARE CENTIMETER.  
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- 330 LONG, E. AND MEYER, L.  
VAPOR PRESSURE OF LIQUID HELIUM AT THE LAMBDA POINT.  
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- 331 LOUNASMAA, O. V.  
THE SPECIFIC HEAT AT CONSTANT VOLUME, THE ENTROPY, THE INTERNAL ENERGY,  
AND THE FREE ENERGY OF LIQUID HELIUM-4 BETWEEN 1.2 AND 2.9 DEGREES K.  
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WAS MEASURED ALONG LAMBDA CURVE. AUTHORS STATE THAT THE VALUES ARE NOT  
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- 332 LOUNASMAA, O. V. AND KAUNISTO, L.  
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CONSTANT VOLUME OF LIQUID HELIUM NEAR THE LAMBDA-CURVE.  
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- HELIUM-4, LAMBDA CURVE (1.76 TO 2.09 DEGREES K.), DENSITY-LIQUID ALONG  
THE LAMBDA CURVE.  
TABLE, GRAPH
- 333 LOUNASMAA, O. V. AND KOJO, E.  
THE SPECIFIC HEAT ( $v$ =CONSTANT) OF LIQUID HELIUM NEAR THE LAMBDA-CURVE AT  
VARIOUS DENSITIES.  
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(1.5 TO 2.15 DEGREES K.) AND LIQUID II (2.2 TO 2.6 DEGREES K.). LAMBDA  
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- 334 LOUNASMAA, O. V. AND KOJO, E.  
 THE SPECIFIC HEAT ( $V = \text{CONSTANT}$ ) OF LIQUID HELIUM NEAR THE LAMBDA-CURVE AT VARIOUS DENSITIES.  
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- 335 LYNCH, E. J.  
 ON THE LAMBDA POINT IN LIQUID HELIUM.  
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- HELIUM-4, LAMBDA TEMPERATURE (2.175 DEGREES K.). LAMBDA TEMPERATURE WAS DETERMINED BY DISCONTINUITY IN DIELECTRIC CONSTANT.  
 TABLE, GRAPH
- 336 MANZHELII, V. G. AND TOLKACHEV, A. M.  
 DENSITY OF AMMONIA AND METHANE IN THE SOLID STATE.  
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- 337 MARKHAM, A. H.  
 SPECIFIC HEAT AND ENTROPY OF LIQUID HELIUM BETWEEN 0.75 AND 1.5 DEGREES K  
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 TABLE, GRAPH
- 338 MARKHAM, A. H., PEARCE, D. C., NETZEL, R. G. AND DILLINGER, J. R.  
 SPECIFIC HEAT OF LIQUID HELIUM-4 BETWEEN 0.4 AND 1.5 DEGREES K.  
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- HELIUM-4, HEAT CAPACITY-LIQUID (0.7 TO 1.5 DEGREES K.).  
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- 339 MARTINEZ, J. P. AND ONNES, H. K.  
 LA MESURE DES TEMPERATURES TRES BASSES. XXXI. TENSIONS DE VAPEUR DE L'HYDROGENE ET QUELQUES NOUVELLES DETERMINATIONS THERMOMETRIQUES DANS LE DOMAINE DE L'HYDROGENE LIQUIDE.  
 (MEASUREMENT OF VERY LOW TEMPERATURES. XXXI. VAPOR PRESSURE OF HYDROGEN AND SOME NEW THERMOMETRIC DETERMINATIONS IN THE REGION OF LIQUID HYDROGEN.)  
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- HYDROGEN, VAPOR PRESSURE-LIQUID (15 TO 21 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
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- 340 MATHIAS, E. AND CROMMELIN, C. A.  
 SUR L'OXIDE DE CARBONE ET L'HELIUM.  
 (CARBON MONOXIDE AND HELIUM.)  
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 EQUATION FOR THE RECTILINEAR DIAMETER OF HELIUM IS ALSO INCLUDED.  
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- 341 MATHIAS, E., CROMMELIN, C. A., BIJLEVELD, W. J. AND GRIGG, PH. P.  
 LA COURBE DES DENSITES DU LIQUIDE ET DE LA VAPEUR SATURES ET LE DIAMETRE  
 RECTILIGNE DE L'OXIDE DE CARBONE.  
 (THE DENSITY CURVES FOR LIQUID AND SATURATED VAPOR AND THE RECTILINEAR  
 DIAMETER FOR CARBON MONOXIDE.)  
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- 342 MATHIAS, E., CROMMELIN, C. A. AND ONNES, H. K.  
 THE RECTILINEAR DIAMETER OF HYDROGEN.  
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- 343 MATHIAS, E., CROMMELIN, C. A. AND ONNES, H. K.  
 LE DIAMETRE RECTILIGNE DU NEON.  
 (RECTILINEAR DIAMETER FOR NEON.)  
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- NEON, DENSITY-LIQUID (25 TO 43 DEGREES K.) AND VAPOR (25 TO 43 DEGREES K.)  
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- 344 MATHIAS, E., CROMMELIN, C. A., ONNES, H. K. AND SWALLOW, J. C.  
 FURTHER EXPERIMENTS WITH LIQUID HELIUM. X. THE RECTILINEAR DIAMETER OF  
 HELIUM.  
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- HELIUM, DENSITY-LIQUID (2.3 TO 4.7 DEGREES K.) AND VAPOR (2.3 TO 4.7 DEGREES K.), EQUATION FOR RECTILINEAR DIAMETER.  
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- 345 MATHIAS, E. AND ONNES, H. K.  
 THE RECTILINEAR DIAMETER FOR OXYGEN.  
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- 346 MATHIAS, E., ONNES, H. K. AND CROMMELIN, C. A.  
 ON THE RECTILINEAR DIAMETER FOR ARGON.  
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ARGON, DENSITY-LIQUID (100 TO 150 DEGREES K.) AND VAPOR (100 TO 150  
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- 347 MATHIAS, E., ONNES, H. K. AND CROMMELIN, C. A.  
 THE RECTILINEAR DIAMETER OF NITROGEN.  
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NITROGEN, DENSITY-LIQUID (65 TO 125 DEGREES K.) AND VAPOR (65 TO 125  
 DEGREES K.), EQUATION FOR RECTILINEAR DIAMETER.  
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- 348 MC WILLIAMS, A. S.  
 CALORIMETRIC MEASUREMENTS ON HELIUM 3 AND ON SOLID HELIUM 3 - HELIUM 4  
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HELIUM-3, HEAT CAPACITY-SOLID (0.1 TO 1.0 DEGREES K.), HEAT CAPACITY-  
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- 349 MEGAW, H. K.  
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 4.2 DEGREES K.  
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 DEUTERIUM, DENSITY-SOLID (4.2 DEGREES K.). EXPANDED VERSION OF  
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- 350 MEGAW, H. D. AND SIMON, F.  
DENSITY AND COMPRESSIBILITY OF SOLID HYDROGEN AND DEUTERIUM AT 4.2 DEGREES K.  
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- HYDROGEN, DENSITY-SOLID (4.2 DEGREES K.).  
DEUTERIUM, DENSITY-SOLID (4.2 DEGREES K.).  
SEE NUMBER 349 FOR EXPANDED VERSION.  
TABLE (1 VALUE FOR EACH AT 1 ATMOSPHERE.)
- 351 MENDELSSOHN, K., RUHEMANN, M. AND SIMON, F.  
DIE SPEZIFISCHEN WARMEN DES FESTEN WASSERSTOFFS BEI HELIUMTEMPERATUREN.  
(THE SPECIFIC HEATS OF SOLID HYDROGEN AT HELIUM TEMPERATURES.)  
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- HYDROGEN (50 PERCENT MIXTURE ORTHO-PARA), HEAT CAPACITY-SOLID (4 TO 11 DEGREES K.)  
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- 352 MESSERLY, G. H.  
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J. AM. CHEM. SOC. VOL. 63, 1486-7 (1941)
- HYDROGEN, TRIPLE POINT PRESSURE.  
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- 353 MICHELS, A. AND PRINS, C.  
THE MELTING LINES OF ARGON, KRYPTON, AND XENON UP TO 1500 ATM,  
REPRESENTATION OF THE RESULTS BY A LAW OF CORRESPONDING STATES.  
PHYSICA VOL. 28, 101-116 (1962)
- ARGON, MELTING PRESSURE (84 TO 118 DEGREES K.), TRIPLE POINT.  
TABLE, GRAPH
- 354 MICHELS, A., WASSENAAR, T., DE GRAAFF, W. AND PRINS, CHR.  
VAPOUR PRESSURE OF LIQUID NITROGEN.  
PHYSICA VOL. 19, 26-8 (1953)
- NITROGEN, VAPOR PRESSURE-LIQUID (97 TO 125 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
TABLE, GRAPH, EQUATION
- 355 MICHELS, A., WASSENAAR, T., LEVELT, J. M. AND DE GRAAFF, W.  
COMPRESSIBILITY ISOTHERMS OF AIR AT TEMPERATURES BETWEEN -25 DEGREES C AND -155 DEGREES C AND AT DENSITIES UP TO 560 AMAGATS (PRESSURES UP TO 1000 ATMOSPHERES).  
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- AIR, VAPOR PRESSURE-LIQUID (118 TO 133 DEGREES K.), DENSITY-LIQUID (118 TO 132 DEGREES K.) AND VAPOR (118 TO 133 DEGREES K.).  
TABLE, GRAPH



- 356 MICHELS, A., WASSENAAR, T., SLUYTERS, K. AND DE GRAAFF, W.  
THE TRIPLE POINTS OF CARBON DIOXIDE AND OF ARGON AS FIXED POINTS FOR THE  
CALIBRATION OF THERMOMETERS.  
PHYSICA VOL. 23, 89-94 (1957)

ARGON, TRIPLE POINT.  
TABLE

- 357 MICHELS, A., WASSENAAR, T. AND ZWIETERING, TH. N.  
THE VAPOUR PRESSURE OF CARBON MONOXIDE.  
PHYSICA VOL. 18, 160-62 (1952)

CARBON MONOXIDE, VAPOR PRESSURE-LIQUID (93 TO 133 DEGREES K.), EQUATION  
FOR LIQUID VAPOR PRESSURE.  
TABLE, GRAPH, EQUATION

- 358 MILLS, R. L. AND GRILLY, E. R.  
MELTING CURVES OF HELIUM-3, HELIUM-4, HYDROGEN, DEUTERIUM, NEON,  
NITROGEN, AND OXYGEN UP TO 3500 KILOGRAMS PER SQUARE CENTIMETER.  
PHYS. REV. VOL. 99, 480-486 (1955)

HELIUM-3, MELTING PRESSURE (2 TO 30 DEGREES K.).  
HELIUM-4, MELTING PRESSURE (2 TO 30 DEGREES K.).  
HYDROGEN, MELTING PRESSURE (19 TO 43 DEGREES K.).  
DEUTERIUM, MELTING PRESSURE (19 TO 43 DEGREES K.).  
NEON, MELTING PRESSURE (22 TO 60 DEGREES K.).  
NITROGEN, MELTING PRESSURE (62 TO 120 DEGREES K.).  
OXYGEN, MELTING PRESSURE (54 TO 80 DEGREES K.). NO TABULAR VALUES GIVEN  
ALTHOUGH AUTHORS STATE THAT 240 MELTING POINTS WERE MEASURED. CONSTANTS  
FOR EACH FLUID ARE GIVEN FOR SIMON MELTING EQUATION.  
EQUATION, GRAPH

- 359 MILLS, R. L. AND GRILLY, E. R.  
MELTING CURVES OF HYDROGEN, DEUTERIUM, AND TRITIUM UP TO 3500 KILOGRAMS  
PER SQUARE CENTIMETER.  
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HYDROGEN, MELTING PRESSURE (14 TO 60 DEGREES K.), EQUATION FOR MELTING  
LINE.  
TRITIUM, MELTING PRESSURE (21 TO 60 DEGREES K.), EQUATION FOR MELTING  
LINE.  
DEUTERIUM, MELTING PRESSURE (19 TO 60 DEGREES K.), EQUATION FOR MELTING  
LINE.  
EQUATION, GRAPH

- 360 MILLS, R. L. AND GRILLY, E. R.  
THE VOLUME CHANGE ON MELTING OF HELIUM-3 AND HELIUM-4 UP TO 3500  
KG/SQ.CM.  
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CONF. ON LOW TEMP. PHYS. AND CHEM., MADISON, WISC. (1957)  
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HELIUM-3, MELTING PRESSURE (1.8 TO 3.2 DEGREES K.), DENSITY-SOLID (NO  
TEMPERATURE GIVEN, 80 TO 3000 ATM.) AND LIQUID (NO TEMPERATURE GIVEN, 80  
TO 3000 ATM.). A PHASE DIAGRAM IS SHOWN FOR 50 TO 250 ATM.  
HELIUM-4, DENSITY-SOLID (NO TEMPERATURE GIVEN, 80 TO 3000 ATM.) AND  
LIQUID (NO TEMPERATURE GIVEN, 80 TO 3000 ATM.).  
TABLE, GRAPH



- 361 MILLS, R. L. AND GRILLY, E. R.  
P-V-T RELATIONS IN HELIUM 4 NEAR THE MELTING CURVE AND THE LAMBDA LINE.  
P. 421-2 IN LOW TEMPERATURE PHYSICS, PROC. 8 TH INTERN. CONF. ON LOW  
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WASHINGTON, 1963

HELIUM-4, MELTING PRESSURE (1.28 TO 2.0 DEGREES K.), CHANGE OF VOLUME ON  
MELTING (1.28 TO 2.0 DEGREES K.), EQUATION FOR MELTING PRESSURE.  
TABLE, GRAPH

- 362 MILLS, R. L., GRILLY, E. R. AND SYDORIAK, S. G.  
ANOMALOUS MELTING PROPERTIES OF HELIUM-3.  
ANN. PHYS. (N.Y.) VOL. 12, NO. 1, 41-55 (1961)

HELIUM-3, MELTING PRESSURE (0.33 TO 1.2 DEGREES K.), DENSITY-SOLID (0.33  
TO 1.2 DEGREES K.) AND LIQUID (0.33 TO 1.2 DEGREES K.). EQUATION FOR  
MELTING CURVE.  
TABLE, EQUATION, GRAPH

- 363 MILLS, R. L. AND SCHUCH, A. F.  
STRUCTURE OF THE GAMMA FORM OF SOLID HELIUM 4.  
P. 423-4 IN LOW TEMPERATURE PHYSICS, PROC. 8 TH INTERN. CONF. ON LOW  
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HELIUM-4, DENSITY-SOLID ALPHA AND GAMMA (NO DEFINITE TEMPERATURE GIVEN,  
BUT IT IS WITHIN THE RANGE OF THE GAMMA FORM).  
TABLE

- 364 MOESSEN, G. W.  
THE THERMODYNAMIC TEMPERATURE SCALE BELOW 90 DEGREES K. THE NORMAL  
BOILING POINT OF OXYGEN ON THE THERMODYNAMIC SCALE. THE NORMAL BOILING  
POINT OF NORMAL HYDROGEN ON THE THERMODYNAMIC SCALE.  
PENNSYLVANIA STATE UNIVERSITY, STATE COLLEGE, PA., PH. D. THESIS (1955)  
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OXYGEN, NORMAL BOILING POINT.  
HYDROGEN, NORMAL BOILING POINT.  
TABLE

- 365 MOESSEN, G. W., ASTON, J. G. AND ASCAH, R. G.  
THE THERMODYNAMIC TEMPERATURE SCALE BELOW 90 DEGREES K, THE NORMAL  
BOILING POINT OF NORMAL HYDROGEN.  
J. CHEM. PHYS. VOL. 22, 2096-97 (1954)  
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HYDROGEN (NORMAL), NORMAL BOILING POINT.  
TABLE

- 366 MOISSAN, H. AND DEWAR, J.  
NOUVELLES EXPERIENCES SUR LA LIQUEFACTION DU FLUOR.  
(NEW EXPERIMENTS ON THE LIQUEFACTION OF FLUORINE.)  
COMPT. REND. VOL. 125, 505-11 (1897)

FLUORINE, DENSITY-LIQUID (73 DEGREES K.). THE TEMPERATURE OF THE DENSITY  
MEASUREMENTS IS QUITE VAGUE.  
TABLE  
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- 367 MULLINS, J. C., AND ZIEGLER, W. T.  
 PHASE EQUILIBRIA IN THE ARGON-HELIUM AND ARGON-HYDROGEN SYSTEMS FROM  
 68 DEGREES TO 108 DEGREES K. AND PRESSURES TO 120 ATMOSPHERES.  
 CRYOGENIC ENG. CONF., PHILADELPHIA, PA. (AUG 18-21, 1964) PAPER NO. D-4  
  
 ARGON, MELTING PRESSURE (84 TO 85 DEGREES K.).  
 TABLE, GRAPH
- 368 NARINSKII, G. B.  
 EXPERIMENTAL DATA ON LIQUID-VAPOR EQUILIBRIUM IN THE OXYGEN-ARGON SYSTEM.  
 KISLOROD, NO. 3, 9-16 (1957)  
  
 ARGON, VAPOR PRESSURE-LIQUID (90 TO 120 DEGREES K.). EQUATION FOR LIQUID  
 VAPOR PRESSURE.  
 OXYGEN, VAPOR PRESSURE-LIQUID (90 TO 120 DEGREES K.). EQUATION FOR LIQUID  
 VAPOR PRESSURE.  
 TABLE, EQUATION, GRAPH  
 RUSSIAN
- 369 NEWMAN, R. B.  
 THE VAPOUR-LIQUID EQUILIBRIA OF BINARY MIXTURES OF HYDROGEN, HYDROGEN  
 DEUTERIDE, AND DEUTERIUM.  
 UNIV. OF BRISTOL, PH. D. THESIS (1954) 134 P.  
  
 HYDROGEN (NORMAL), VAPOR PRESSURE-LIQUID (18 TO 28 DEGREES K.).  
 DEUTERIUM (NORMAL), VAPOR PRESSURE-LIQUID (18 TO 28 DEGREES K.).  
 HYDROGEN DEUTERIDE, VAPOR PRESSURE-LIQUID (18 TO 28 DEGREES K.).  
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- 370 NEWMAN, R. B. AND JACKSON, L. C.  
 THE P, T, X RELATIONSHIPS OF HYDROGEN PLUS HYDROGEN DEUTERIDE AND  
 HYDROGEN PLUS DEUTERIUM MIXTURES BETWEEN 18 DEGREES AND 28 DEGREES K.  
 TRANS. FARADAY SOC. VOL. 54, 1481-91 (1958)  
  
 HYDROGEN (NORMAL), VAPOR PRESSURE-LIQUID (18 TO 29 DEGREES K.).  
 DEUTERIUM (NORMAL), VAPOR PRESSURE-LIQUID (18 TO 29 DEGREES K.).  
 HYDROGEN DEUTERIDE, VAPOR PRESSURE-LIQUID (18 TO 29 DEGREES K.).  
 CORRESPONDING PRESSURE AND RESISTANCE MEASUREMENTS WERE MADE AT  
 APPROXIMATELY ONE-HALF DEGREE INTERVALS BETWEEN 18 AND 28.5 DEGREES K.  
 THE VALUES IN THE TABLES WERE READ FROM LARGE SCALE GRAPHS OF VAPOR  
 PRESSURE AGAINST PLATINUM RESISTANCE. CORRESPONDING TEMPERATURES ARE NOT  
 GIVEN FOR THE PRESSURE VALUES.  
 TABLE
- 371 OLSZEWSKI, K.  
 TEMPERATURE ET PRESSION CRITIQUE DE L'AIR. RELATION ENTRE LA TEMPERATURE  
 DE L'AIR ET LA PRESSION DE L'EVAPORATION.  
 (CRITICAL TEMPERATURE AND PRESSURE OF AIR. RELATION BETWEEN THE  
 TEMPERATURE OF THE AIR AND THE PRESSURE OF EVAPORATION.)  
 COMPT. REND. VOL. 99, 184-6 (1884)  
  
 AIR, VAPOR PRESSURE-LIQUID (68 TO 133 DEGREES K.), NORMAL BOILING POINT  
 AND CRITICAL POINT.  
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- 372 OLSZEWSKI, K.  
LIQUEFACTION ET SOLIDIFICATION DU FORMENE ET DU DEUTOXYDE D'AZOTE.  
(LIQUEFACTION AND SOLIDIFICATION OF METHANE AND NITROGEN DIOXIDE.)  
COMPT. REND. VOL. 100, 940-6 (1885)
- METHANE, VAPOR PRESSURE-LIQUID (91 TO 109 DEGREES K.) AND SOLID (71 TO 87 DEGREES K.), CRITICAL POINT, NORMAL BOILING POINT.  
TABLE  
FRENCH
- 373 OLSZEWSKI, K.  
THE LIQUEFACTION AND SOLIDIFICATION OF ARGON.  
TRANS. ROY. SOC. (LONDON) VOL. A186, 253-7 (1895)
- ARGON, VAPOR PRESSURE-LIQUID (86 TO 152 DEGREES K.), MELTING TEMPERATURE (83 DEGREES K. AND 1 ATM.). CRITICAL POINT AND NORMAL BOILING POINT.  
TABLE
- 374 OLSZEWSKI, K.  
DETERMINATION OF THE CRITICAL AND THE BOILING TEMPERATURE OF HYDROGEN.  
PHIL. MAG. VOL. 40, 202-10 (1895)
- HYDROGEN, CRITICAL TEMPERATURE, NORMAL BOILING POINT.  
OXYGEN, CRITICAL TEMPERATURE, NORMAL BOILING POINT.  
TABLE
- 375 OLSZEWSKI, K.  
DIE UBERFUHRUNG DES ARGONS IN DEN FLUSSIGEN UND FESTEN ZUSTAND.  
(THE CONVERSION OF ARGON IN THE LIQUID AND SOLID STATE.)  
Z. PHYSIK. CHEM. VOL. 16, 380-84 (1895)
- ARGON, VAPOR PRESSURE-LIQUID (134 TO 153 DEGREES K.), MELTING PRESSURE (83 DEGREES K.), CRITICAL TEMPERATURE, NORMAL BOILING POINT, DENSITY-LIQUID (86 DEGREES K.)  
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- 376 OLSZEWSKI, K.  
EIN BEITRAG ZUR BESTIMMUNG DES KRITISCHEN PUNKTES DE WASSERSTOFFS.  
(A CONTRIBUTION TO THE DETERMINATION OF THE CRITICAL POINT OF HYDROGEN.)  
ANN. PHYSIK VOL. 17, 986-93 (1905)
- HYDROGEN, CRITICAL TEMPERATURE AND PRESSURE.  
TABLE  
GERMAN
- 377 OLSZEWSKI, V.  
RELATION ENTRE LES TEMPERATURES ET LES PRESSIONS DU PROTOXYDE DE CARBONE LIQUIDE.  
(RELATION BETWEEN TEMPERATURE AND PRESSURE OF LIQUID CARBON MONOXIDE.)  
COMPT. REND. VOL. 99, 706-07 (1884)
- CARBON MONOXIDE, VAPOR PRESSURE-LIQUID (83 TO 133 DEGREES K.), SOLIDIFICATION POINT.  
TABLE  
FRENCH

- 378 ONNES, H. K.  
 ISOTHERMS OF MONATOMIC ELEMENTS AND THEIR BINARY MIXTURES. IV. DATA DETERMINATIONS OF NEON AND HELIUM.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 112 (1909)  
 TRANSLATION FROM VERSLAG. GEWONE VERGADER. AFDEL. NATUURK. KONINKL. NED. AKAD. WETENSCHAP. VOL. 18, 168-72 (1909)
- HELIUM, CRITICAL PRESSURE.  
 NEON, CRITICAL PRESSURE AND TRIPLE POINT PRESSURE.  
 TABLE
- 379 ONNES, H. K.  
 FURTHER EXPERIMENTS WITH LIQUID HELIUM. A. ISOTHERMS OF MONATOMIC GASES ETC. VIII. THERMAL PROPERTIES OF HELIUM.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 119 (1911)  
 ALSO IN KONINKL. AKAD. WETENSCHAP. AMSTERDAM 1093-1113 (1911)
- HELIUM, VAPOR PRESSURE-LIQUID (1.5 TO 4.3 DEGREES K.), DENSITY-LIQUID (1.5 TO 4.3 DEGREES K.) AND VAPOR (3.2 TO 4.3 DEGREES K.).  
 TABLE, GRAPH
- 380 ONNES, H. K.  
 FURTHER EXPERIMENTS WITH LIQUID HELIUM. F. ISOTHERMS OF MONATOMIC GASES ETC. XII. THERMAL PROPERTIES OF HELIUM.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 124B (1911)  
 ALSO IN VERSLAG. AFDEEL. NATUURK. KON. AKAD. WETENSCHAP. AMSTERDAM 793-9 (1911)
- HELIUM, VAPOR PRESSURE-LIQUID (4.3 TO 5.2 DEGREES K.), CRITICAL POINT.  
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- 381 ONNES, H. K. AND BOKS, J. D. A.  
 FURTHER EXPERIMENTS WITH LIQUID HELIUM. U. ISOTHERMS OF MONATOMIC SUBSTANCES AND THEIR BINARY MIXTURES. XXIV. ISOTHERMS OF HELIUM AT 4.2 DEGREES K. AND LOWER. V. THE VARIATION OF DENSITY OF LIQUID HELIUM BELOW THE BOILING POINT.  
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- HELIUM, VAPOR PRESSURE-LIQUID (2.6 TO 4.2 DEGREES K.), DENSITY-LIQUID (1.2 TO 4.2 DEGREES K.)  
 TABLE, GRAPH
- 382 ONNES, H. K. AND BRAAK, C.  
 ON THE MEASUREMENT OF VERY LOW TEMPERATURES. XIII. DETERMINATIONS WITH THE HYDROGEN THERMOMETER.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 95E (1906)  
 TRANSLATION FROM VERSLAG. AFDEEL. NATUURK. KON. AKAD. WETENSCHAP. (AMSTERDAM) 349-60 (OCT 1906)
- HYDROGEN, VAPOR PRESSURE-LIQUID (NEAR MELTING POINT).  
 TABLE (1 VALUE)



- 383 ONNES, H. K. AND BRAAK, C.  
ON THE MEASUREMENT OF VERY LOW TEMPERATURES. XXI. ON THE STANDARDIZING OF TEMPERATURES BY MEANS OF BOILING POINTS OF PURE SUBSTANCES. THE DETERMINATION OF THE VAPOUR PRESSURE OF OXYGEN AT THREE TEMPERATURES. COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 107A (1908)  
TRANSLATION FROM VERSLAG GEWONE VERGADER. AFDEEL. NATUURK. KONINKL. AKAD. WETENSCHAP. AMSTERDAM 86-93 (1908)

OXYGEN, VAPOR PRESSURE-LIQUID (86.5 AND 86.6 DEGREES K.), ALSO INCLUDES SEVERAL VAPOR PRESSURE DETERMINATIONS NEAR THE NORMAL BOILING POINT.  
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- 384 ONNES, H. K. AND CROMMELIN, C. A.  
ISOTHERMS OF MONATOMIC SUBSTANCES AND OF THEIR BINARY MIXTURES. XI. REMARKS UPON THE CRITICAL TEMPERATURE OF NEON AND UPON THE MELTING POINT OF OXYGEN.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 121C (1911)  
TRANSLATION FROM VERSLAG GEWONE VERGADER. AFDEEL. NATUURK. KONINKL. AKAD. WETENSCHAP. AMSTERDAM VOL. 27, 73-4 (1911)

OXYGEN, MELTING POINT (55 DEGREES K.).  
TABLE (ONE VALUE)

- 385 ONNES, H. K. AND CROMMELIN, C. A.  
ISOTHERMALS OF DI-ATOMIC SUBSTANCES AND THEIR MIXTURES XIII. LIQUID-DENSITIES OF HYDROGEN BETWEEN BOILING POINT AND TRIPLE POINT, CONTRACTION OF HYDROGEN ON FREEZING.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 137A (1913)  
TRANSLATION FROM VERSLAG. GEWONE VERGADER. WIS- EN NATUURK. AFDEEL. KON. AKAD. WETENSCHAP. AMSTERDAM, 214-6 (1913)

HYDROGEN, DENSITY-LIQUID (15 TO 20 DEGREES K.) AND SOLID (11 DEGREES K.), EQUATION FOR LIQUID DENSITY. THE TRIPLE POINT DENSITY OF THE LIQUID WAS ALSO CALCULATED AND AN ESTIMATE WAS MADE OF THE CONTRACTION ON FREEZING BY ASSUMING THE MEASURED SOLID DENSITY AT 11 DEGREES K. TO BE THE SAME AS THE TRIPLE POINT DENSITY.  
TABLE, EQUATION

- 386 ONNES, H. K. AND CROMMELIN, C. A.  
ISOTHERMALS OF MONATOMIC GASES AND OF THEIR BINARY MIXTURES. XVII. ISOTHERMALS OF NEON AND PRELIMINARY DETERMINATIONS CONCERNING THE LIQUID CONDITION OF NEON.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 147D (1915)  
ALSO IN KONINKL. NED. AKAD. WETENSCHAP. PROC. VOL. 18, 515-20 (1916)

NEON, VAPOR PRESSURE-LIQUID (24 TO 27 DEGREES K.), DENSITY-LIQUID (24 TO 27 DEGREES K.), NORMAL BOILING POINT AND TRIPLE POINT. DATA IS OF A PRELIMINARY NATURE.  
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- 387 ONNES, H. K., CROMMELIN, C. A. AND CATH, P. G.  
ISOTHERMALS OF MON-ATOMIC SUBSTANCES AND THEIR BINARY MIXTURES. XVIII. A PRELIMINARY DETERMINATION OF THE CRITICAL POINT OF NEON.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 151B (1917)  
TRANSLATION FROM VERSLAG. GEWONE VERGADER. WIS- EN NATUURK. AFDEEL. VOL. 25, 1224-8 (1917)  
ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 19, 1058-62 (1917)

NEON, VAPOR PRESSURE-LIQUID (44 TO 45 DEGREES K.), CRITICAL POINT.  
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- 388 ONNES, H. K., CROMMELIN, C. A. AND CATH, P. G.  
ISOTHERMALS OF DIATOMIC SUBSTANCES AND THEIR BINARY MIXTURES. XIX. A  
PRELIMINARY DETERMINATION OF THE CRITICAL POINT OF HYDROGEN.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 151C (1917)  
TRANSLATION FROM VERSLAG GEWONE VERGADER. AFDEL NATUURK. KONINKL. NED.  
AKAD. WETENSCHAP. VOL. 26, 124-9 (MAY 1917)  
ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 20, 1 (1917)
- HYDROGEN, VAPOR PRESSURE-LIQUID (32 TO 33 DEGREES K.), CRITICAL POINT.  
LIQUID AND VAPOR DENSITIES ARE CALCULATED AS WELL AS THE CRITICAL DENSITY  
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- 389 ONNES, H. K., DORSMAN, C. AND HOLST, G.  
ISOTHERMALS OF DIATOMIC SUBSTANCES AND THEIR BINARY MIXTURES. XV. VAPOUR-  
PRESSURES OF OXYGEN AND CRITICAL POINT OF OXYGEN AND NITROGEN.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 145B (1914)  
TRANSLATION FROM VERSLAG GEWONE VERGADER. AFDEEL. NATUURK. KONINKL. AKAD.  
WETENSCHAP. AMSTERDAM 982-5 (1914)  
ALSO IN PROC. ACAD. SCI. AMSTERDAM VOL. 17, 950-3 (1915)
- OXYGEN, VAPOR PRESSURE-LIQUID (118 TO 154 DEGREES K.), CRITICAL POINT.  
NITROGEN, CRITICAL POINT (125.9 DEGREES K.).  
TABLE
- 390 ONNES, H. K. AND KEESOM, W. H.  
ON THE MEASUREMENT OF VERY LOW TEMPERATURES. XXIII. VAPOR PRESSURES OF  
HYDROGEN FROM THE BOILING POINT DOWN TO NEAR THE TRIPLE POINT.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 137D (1913)  
TRANSLATION FROM VERSLAG. GEWONE VERGADER. WIS- EN NATUURK. AFDEEL.  
KON. AKAD. WETENSCHAP. AMSTERDAM 389-93 (1913)
- HYDROGEN, VAPOR PRESSURE-LIQUID (14 TO 21 DEGREES K.), TRIPLE POINT.  
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- 391 ONNES, H. K., AND MARTINEZ, J. P.  
PRESIONES DE VAPOR DEL HIDROGENO Y NUEVAS DETERMINACIONES EN LA REGION  
DEL HIDROGENO LIQUIDO.  
(VAPOR PRESSURE OF HYDROGEN AND NEW DETERMINATIONS IN THE LIQUID HYDROGEN  
REGION.)  
ANALES REAL SOC. ESPAN. FIS. QUIM. (MADRID) VOL. 20, 233-42 (1922)
- HYDROGEN, VAPOR PRESSURE-LIQUID (14 TO 21 DEGREES K.).  
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- 392 ONNES, H. K. AND VAN GULIK, W.  
THE MELTING-CURVE OF HYDROGEN TO 55 KG/SQ.CM.  
COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 184A (1926)
- HYDROGEN, MELTING PRESSURE (14 TO 16 DEGREES K.).  
TABLE, GRAPH

- 393 ONNES, H. K. AND WEBER, S.  
 FURTHER EXPERIMENTS WITH LIQUID HELIUM. O. ON THE MEASUREMENT OF VERY LOW TEMPERATURES. XXV. THE DETERMINATION OF THE TEMPERATURES WHICH ARE OBTAINED WITH LIQUID HELIUM, ESPECIALLY IN CONNECTION WITH MEASUREMENTS OF THE VAPOUR PRESSURE OF HELIUM.  
 COMMUNS. PHYS. LAB. UNIV. LEIDEN NO. 147B (1915)  
 TRANSLATION FROM VERSLAG GEWONE VERGADER. WIS- EN NATUURK. AFDEEL. KON. AKAD. WETENSCHAP. AMSTERDAM 370-84 (1915)
- HELIUM, VAPOR PRESSURE-LIQUID (1.5 TO 5 DEGREES K.), NORMAL BOILING POINT TABLE, EQUATION
- 394 ORLOVA, M. P.  
 TEMPERATURE REPRODUCTION OF PHASE TRANSFORMATION IN SOLID OXYGEN. IZMERITEL'NAYA TEKH. VOL. 1961, NO. 2, 21-23 (1961)
- OXYGEN, SOLID-SOLID TRANSITION (ALPHA TO BETA) (23.9 DEGREES K.) AND (BETA TO GAMMA) (43.8 DEGREES K.), TRIPLE POINT.  
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 RUSSIAN
- 395 OSBORNE, D. W., ABRAHAM, B. M. AND WEINSTOCK, B.  
 VAPOR PRESSURES OF HELIUM-3 AND OF HELIUM-3 - HELIUM-4 MIXTURES. P. 48 IN PROC. INTERN. CONF. ON PHYSICS OF VERY LOW TEMPERATURES, MASS. INST. TECHNOL., CAMBRIDGE (SEPT 1949)
- HELIUM-3, VAPOR PRESSURE-LIQUID (1.03 TO 3.45 DEGREES K.), EQUATION FOR LIQUID VAPOR PRESSURE.  
 EQUATION ONLY
- 396 OSBORNE, D. W., ABRAHAM, B. M. AND WEINSTOCK, B.  
 SOLIDIFICATION OF HELIUM-3.  
 PHYS. REV. VOL. 82, 263-4 (1951)
- HELIUM-3, MELTING PRESSURE (1.02 TO 1.51 DEGREES K.), EQUATION FOR MELTING CURVE.  
 HELIUM-4, MELTING TEMPERATURE (1.09 DEGREES K.). ONE VALUE ONLY.  
 TABLE, GRAPH, EQUATION
- 397 OSBORNE, D. W., ABRAHAM, B. M. AND WEINSTOCK, B.  
 THE MELTING CURVE OF HELIUM-3.  
 PHYS. REV. VOL. 85, 715 (1952)
- HELIUM-3, MELTING PRESSURE (0.16 TO 1.51 DEGREES K.), EQUATION FOR MELTING CURVE. THIS IS AN ABSTRACT OF A PAPER PRESENTED AT AN AMERICAN PHYSICAL SOCIETY MEETING. THE EQUATION FOR THE MELTING CURVE TO 0.5 DEGREES K. IS REPORTED, BUT NO ACCURACY IS GIVEN. BELOW 0.5 DEGREES K. THE PRESSURE RAPIDLY APPROACHES A CONSTANT VALUE OF 29.3 ATM.  
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- 398 OSBORNE, D. W., ABRAHAM, B. M. AND WEINSTOCK, B.  
 THE HEAT CAPACITY AND ENTROPY OF LIQUID HELIUM-3 FROM 0.42 TO 1.06 DEGREES K.  
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- 399 OSBORNE, D. W., ABRAHAM, B. M. AND WEINSTOCK, B.  
THERMODYNAMIC PROPERTIES OF LIQUID HELIUM-3 BETWEEN 0.23 AND 2 DEGREES K.  
BULL. INST. INTERN. FROID ANNEXE 1955-3, 26-9 (PRESENTED AT CONF. DE  
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ARGON, TRIPLE POINT (83 DEGREES K.).  
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DETERMINED BY MEANS OF SPECIFIC HEAT MEASUREMENT.  
ONE TABULAR VALUE, GRAPH

- 401 POOL, R. A. H., SHIELDS, B. D. C. AND STAVELEY, L. A. K.  
TRIPLE POINT OF ARGON AS A THERMOMETRIC FIXED POINT.  
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LIQUID VAPOR PRESSURE.  
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- 403 PRIKHOTKO, A. AND YAVNEL, A.  
INVESTIGATION OF SOLID MIXTURES OXYGEN-NITROGEN.  
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ONE VALUE IS GIVEN FOR EACH TRANSITION. VALUES OF THE PRESSURE AT  
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- 404 RAMSAY, W. AND TRAVERS, M. W.  
II. ARGON AND ITS COMPANIONS.  
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DEGREES K.).  
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- 405 RIVES, J. E.  
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TABLES, GRAPH
- 406 ROBERTS, T. R. AND SYDORIAK, S. G.  
THE SPECIFIC HEAT OF LIQUID HELIUM-3.  
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TABLE, GRAPH
- 410 RODER, H. M., DILLER, D. E., WEBER, L. A. AND GOODWIN, R. D.  
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- 411 ROGOVAYA, I. A. AND KAGANER, M. G.  
THE COMPRESSIBILITY OF ARGON AT LOW TEMPERATURES UP TO 200 ATMOSPHERES.  
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- 412 ROTH, E.  
NOUVELLES DETERMINATIONS DES TENSIONS DE VAPEUR DES ISOTOPES DU NEON.  
(NEW DETERMINATION OF THE VAPOR PRESSURES OF THE ISOTOPES OF NEON.)  
COMM. ENERGIE AT. (FRANCE) RAPPT. NO. 1666 (1960) 109 PP REPR. FROM  
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DEGREES K.) AND LIQUID (25 TO 30 DEGREES K.), TRIPLE POINT.  
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- 413 RUHEMANN, M.  
RONTGENOGRAPHISCHE UNTERSUCHUNGEN AN FESTEM STICKSTOFF UND SAUERSTOFF.  
(X-RAY INVESTIGATION OF SOLID NITROGEN AND OXYGEN.)  
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DIFFRACTION INVESTIGATION. DENSITY IS CALCULATED ONLY FOR BETA-NITROGEN  
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- 414 RUHEMANN, M., LICHTER, A. AND KOMAROW, P.  
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(THE PHASE DIAGRAMS OF LOW-MELTING MIXTURES. II. THE MELTING DIAGRAM OF  
OXYGEN-NITROGEN AND THE PHASE DIAGRAM OF NITROGEN-CARBON MONOXIDE.)  
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NITROGEN, MELTING PRESSURE (54.1 DEGREES K.), SOLID-SOLID TRANSITION  
(SOLID I TO SOLID II) (35.4 DEGREES K.).  
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- 415 SAGENKAHN, M. L. AND FINK, H. L.  
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- 416 SALINGER, G. L.  
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TO 0.1 DEGREES K.), MELTING PRESSURE (NO TEMPERATURE). MEASUREMENT OF  
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- 417 SATTERLY, J. AND PATTERSON, J.  
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- 418 SCHMIDT, G. AND KEESOM, W. H.  
NEW MEASUREMENTS OF LIQUID HELIUM TEMPERATURES. I. THE BOILING POINT OF  
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- 419 SCHMIDT, G. AND KEESOM, W. H.  
NEW MEASUREMENTS OF LIQUID HELIUM TEMPERATURES. II. THE VAPOUR PRESSURE  
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- 420 SCHUCH, A. F., GRILLY, E. R. AND MILLS, R. L.  
STRUCTURE OF THE ALPHA AND BETA FORMS OF SOLID HELIUM-3.  
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- HELIUM-3, DENSITY-SOLID ALPHA (1.9 DEGREES K.) AND SOLID BETA (3.3  
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- 421 SCHUCH, A. F. AND MILLS, R. L.  
THE STRUCTURE OF THE ALLOTROPIC FORMS OF HELIUM-3 AND HELIUM-4.  
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19 DEGREES K.). THREE VALUES, ONE FOR EACH OF THE THREE ALLOTROPIC SOLID  
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HELIUM-4, MELTING PRESSURE (2.5 TO 16 DEGREES K.), DENSITY-SOLID (2.5 TO  
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- 422 SCOTT, R. B. AND BRICKWEDDE, F. G.  
THE VAPOR PRESSURE OF HYDROGEN DEUTERIDE.  
PHYS. REV. VOL. 48, 483 ONLY (1935)
- HYDROGEN DEUTERIDE, VAPOR PRESSURE-SOLID (14 TO 16 DEGREES K.) AND LIQUID  
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- 423 SCOTT, R. B. AND BRICKWEDDE, F. G.  
MOLECULAR VOLUMES AND EXPANSIVITIES OF LIQUID NORMAL HYDROGEN AND  
PARAHYDROGEN.  
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- 424 SCOTT, R. B., BRICKWEDDE, F. G., UREY, H. C., AND WAHL, M. H.  
THE VAPOR PRESSURES AND DERIVED THERMAL PROPERTIES OF HYDROGEN AND  
DEUTERIUM.  
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VAPORIZATION. EQUATION FOR LIQUID VAPOR PRESSURE.  
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- 425 SEVRYUGOVA, N. I. AND ZHAVORONKOV, N. M.  
DIFFERENTIAL METHOD OF DETERMINATION OF THE VAPOR PRESSURE VARIATIONS  
FOR TWO ISOTOPIC FORMS AT LOW TEMPERATURE.  
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CARBON MONOXIDE (23 AND 32 PERCENT CARBON-13), VAPOR PRESSURE-LIQUID (69  
TO 101 DEGREES K.).  
GRAPHICAL DATA ONLY  
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- 426 SHEARER, J. S.  
THE HEAT OF VAPORIZATION OF NITROGEN.  
PHYS. REV. VOL. 17, 124 (1903)
- NITROGEN, HEAT OF VAPORIZATION (NO TEMPERATURE GIVEN).  
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- 427 SHEARER, J. S.  
THE HEAT OF VAPORIZATION OF OXYGEN, NITROGEN AND AIR.  
PHYS. REV. VOL. 17, 469-75 (1903)
- NITROGEN, HEAT OF VAPORIZATION.  
OXYGEN, HEAT OF VAPORIZATION.  
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- 428 SHERMAN, R. H. AND EDESKUTY, F. J.  
P-V-T RELATIONS OF LIQUID HELIUM-3.  
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HELIUM-3, MELTING PRESSURE (1 TO 3 DEGREES K.), DATA IS REPRESENTED BY EQUATION ONLY), DENSITY-LIQUID (1.2 TO 1.6 DEGREES K.). EQUATION FOR MELTING CURVE.  
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- 429 SHERMAN, R. H. AND EDESKUTY, F. J.  
PRESSURE-VOLUME-TEMPERATURE RELATIONS OF LIQUID HELIUM-3 FROM 1.00 TO 3.30 DEGREES K.  
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HELIUM-3, MELTING PRESSURE (0.98 TO 3.3 DEGREES K.), DENSITY-LIQUID (0.98 TO 3.3 DEGREES K.). EQUATION FOR MELTING PRESSURE  
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- 430 SHUPERT, T. C.  
DENSITY DETERMINATION OF CRYOGENIC LIQUIDS AS A FUNCTION OF SATURATED VAPOR PRESSURE.  
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OXYGEN, DENSITY-LIQUID (14 TO 30 PSIA). DENSITY IS MEASURED AS A FUNCTION OF VAPOR PRESSURE.  
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- 431 SIMON, F. AND KIPPERT, F.  
MESSUNGEN ZUR ZUSTANDSGLEICHUNG DES FESTEN ARGONS.  
(MEASUREMENTS FOR THE EQUATION OF STATE OF SOLID ARGON.)  
Z. PHYSIK. CHEM. VOL. 135, 113-28 (1928)

ARGON, DENSITY-SOLID (76 DEGREES K.)  
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- 432 SIMON, F. AND LANGE, F.  
DIE THERMISCHEN DATEN DES KONDENSIERTEN WASSERSTOFFS.  
(THE THERMAL DATA OF CONDENSED HYDROGEN.)  
Z. PHYSIK VOL. 15, 312-21 (1923)

HYDROGEN, HEAT CAPACITY-SOLID (11 TO 13 DEGREES K.) AND LIQUID (15 TO 18 DEGREES K.), HEAT OF MELTING (13.9 DEGREES K.) AND HEAT OF VAPORIZATION (16 TO 20 DEGREES K.).  
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- 433 SIMON, F., RUHEMANN, M. AND EDWARDS, W. A. M.  
UNTERSUCHUNGEN UBER DIE SCHMELZKURVE DES HELIUMS I.  
(RESEARCHES ON THE MELTING CURVES OF HELIUM I.)  
Z. PHYSIK. CHEM. (LEIPZIG) VOL. B1, 340-4 (1928)

HELIUM, MELTING PRESSURE (12 TO 20 DEGREES K.), LATENT HEAT OF MELTING (16 DEGREES K.). EQUATION FOR MELTING CURVE.  
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- 434 SIMON, F., RUHEMANN, M. AND EDWARDS, W. A. M.  
 UNTERSUCHUNGEN UBER DIE SCHMELZKURVE DES HELIUMS. II.  
 (RESEARCHES ON THE MELTING CURVE OF HELIUM. II.)  
 Z. PHYSIK. CHEM. (LEIPZIG) VOL. B5, 62-77 (1929)
- HELIUM, MELTING PRESSURE.  
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- 435 SIMON, F., RUHEMANN, M. AND EDWARDS, W. A. M.  
 DIE SCHMELZKURVEN VON WASSERSTOFF, NEON, STICKSTOFF UND ARGON.  
 (MELTING CURVES OF HYDROGEN, NEON, NITROGEN AND ARGON.)  
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- HYDROGEN, MELTING PRESSURE (14 TO 75 DEGREES K.).  
 NEON, MELTING PRESSURE (24 TO 69 DEGREES K.).  
 NITROGEN, MELTING PRESSURE (63 TO 130 DEGREES K.).  
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- 436 SIMON, F., RUHEMANN, M. AND EDWARDS, W. A. M.  
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 (FUSION CURVES FOR HYDROGEN, NEON, NITROGEN AND ARGON. CORRECTION)  
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- CORRECTION FOR NUMBER 435 ABOVE.  
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- 437 SIMON, F. AND STECKEL, F.  
 VORLAUFIGE BESTIMMUNG DER SCHMELZWARME UND DICHT E DES HELIUMS ZWISCHEN  
 15 UND 20 GRAD ABS.  
 (PRELIMINARY DETERMINATION OF THE HEAT OF MELTING AND DENSITY OF HELIUM  
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 Z. PHYSIK. CHEM. BODENSTEIN-FESTBAND 737-44 (1931)
- HELIUM, MELTING PRESSURE (14.9 TO 20.4 DEGREES K.), DENSITY-SOLID AND  
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- 438 SIMON, F. AND VON SIMSON, C.  
 DIE KRISTALLSTRUKTUR DES ARGONS.  
 (THE CRYSTAL STRUCTURE OF ARGON.)  
 Z. PHYSIK VOL. 25, 160-4 (1924)
- ARGON, DENSITY-SOLID (40 DEGREES K.). SPECTROGRAPHIC DETERMINATION.  
 TABLE  
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- 439 SIMON, M.  
ON THE THERMODYNAMIC PROPERTIES OF HYDROGEN-DEUTERIUM SOLID MIXTURES.  
PHYS. LETTERS. VOL. 9, NO. 2, 122-3 (APR 1964)
- PARAHYDROGEN, VAPOR PRESSURE-SOLID (13.8 DEGREES K.)  
DEUTERIUM (ORTHO), VAPOR PRESSURE-SOLID (13.8 DEGREES K.).  
THESE VALUES REPRESENT THE END POINTS OF A P-X DIAGRAM OF PARAHYDROGEN-  
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GRAPHICAL DATA ONLY
- 440 SMITH, A. L., HALLETT, N. C. AND JOHNSTON, H. L.  
CONDENSED GAS CALORIMETRY. VI. THE HEAT CAPACITY OF LIQUID PARAHYDROGEN  
FROM BOILING POINT TO CRITICAL POINT.  
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TABLE, GRAPH
- 441 SMITH, B. L.  
REFRACTIVE INDEX OF SOLID KRYPTON AND SOLID ARGON.  
PHIL. MAG. VOL. 6, 939-42 (1961)
- ARGON, DENSITY-SOLID (77 TO 83 DEGREES K.).  
GRAPHICAL DATA ONLY
- 442 SOMMERS, H. S.  
VAPOR PRESSURES OF HELIUM-3 AND HELIUM-4 MIXTURES BELOW THE LAMBDA-POINT.  
PHYS. REV. VOL. 88, NO. 1, 113-27 (1952)
- HELIUM-3, VAPOR PRESSURE-LIQUID (1 TO 2.2 DEGREES K.).  
TABLE, GRAPH
- 443 SREEDHAR, A. K.  
PROPERTIES OF HELIUM THREE AT VERY LOW TEMPERATURES.  
OHIO STATE UNIV., COLUMBUS, PH. D. THESIS (1958) 127 P.
- HELIUM-3, HEAT CAPACITY-LIQUID (0.08 TO 0.8 DEGREES K.).  
CODED FROM ABSTRACT.  
TABLE, GRAPH
- 444 STEVENSON, R.  
SOLID METHANE. CHANGES IN PHASE UNDER PRESSURE.  
J. CHEM. PHYS. VOL. 27, NO. 3, 656-8 (1957)
- METHANE, SOLID-SOLID TRANSITION (ALPHA TO GAMMA) (30 TO 65 DEGREES K.),  
(ALPHA TO BETA) (25 TO 30 DEGREES K.), (BETA TO GAMMA) (10 TO 30 DEGREES  
K.) AND (GAMMA TO DELTA) (5 TO 25 DEGREES K.).  
DATA IS ALL IN THE FORM OF A PHASE DIAGRAM.  
GRAPHICAL DATA ONLY



- 445 STEVENSON, R.  
 COMPRESSIONS AND SOLID PHASES OF CARBON DIOXIDE, CARBON DISULFIDE,  
 CARBONYL SULFIDE, OXYGEN, AND CARBON MONOXIDE.  
 J. CHEM. PHYS. VOL. 27, 673-5 (1957)
- OXYGEN, SOLID-SOLID TRANSITION (I TO II) (24 TO 28 DEGREES K.) AND  
 (II TO III) (28 TO 44 DEGREES K.).  
 CARBON MONOXIDE WAS INVESTIGATED FOR A SOLID TRANSITION BUT NONE WAS  
 FOUND. THE P-T DIAGRAM OF THE SOLID DOES NOT REPRESENT ANY SATURATION  
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 GRAPHICAL DATA ONLY
- 446 STEWART, J. W.  
 COMPRESSION OF SOLIDIFIED GASES TO 20,000 KILOGRAMS PER SQUARE CENTIMETER  
 AT LOW TEMPERATURE.  
 J. PHYS. CHEM. SOLIDS VOL. 1, 146-58 (1956)
- NITROGEN, SOLID-SOLID TRANSITION (65 DEGREES K.).  
 TABLE (1 VALUE)
- 447 STEWART, J. W.  
 PHASE TRANSITIONS AND COMPRESSIONS OF SOLID METHANE, DEUTEROMETHANE, AND  
 OXYGEN.  
 PHYS. CHEM. SOLIDS VOL. 12, 122-9 (1959)  
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- METHANE, SOLID-SOLID TRANSITION (I TO II) (20 TO 30 DEGREES K.),  
 (I TO III) (33 TO 120 DEGREES K.) AND (II TO III) (5 TO 33 DEGREES K.).  
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 (I TO III) (40 TO 100 DEGREES K.) AND (II TO III) (25 TO 35 DEGREES K.).  
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SAUERSTOFFGEMISCHE BEI 1000 TORR.  
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- 498 WITT, G.  
UBER DIE VERDAMPFUNGSWARME FLUSSIGER LUFT.  
(THE HEAT OF VAPORIZATION OF LIQUID AIR.)  
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- 499 WORLEY, R. D., ZEMANSKY, M. W. AND BOORSE, H. A.  
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- 501 WROBLEWSKI, S.  
SUR LA TEMPERATURE D'EBULLITION DE L'OXYGENE, DE L'AIR, DE L'AZOTE ET DE L'OXYDE DE CARBONE SOUS LA PRESSION ATMOSPHERIQUE.  
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AIR, NORMAL BOILING POINT (81 DEGREES K.).  
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- 502 WROBLEWSKI, S.  
 UEBER DEN GEBRAUCH DES SIEDENDEN SAUERSTOFFS, STICKSTOFFS, KOHLENOXYDS,  
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 (CONCERNING THE USE OF BOILING OXYGEN, NITROGEN, AND CARBON MONOXIDE AS  
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- 503 WROBLEWSKI, S.  
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 (THE BEHAVIOR OF LIQUID ATMOSPHERIC AIR.)  
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- 504 WROBLEWSKI, S.  
 SUR LA DENSITE DE L'AIR ATMOSPHERIQUE LIQUIDE ET DE SES COMPOSANTS, ET  
 SUR LE VOLUME ATOMIQUE DE L'OXYGENE ET DE L'AZOTE.  
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- 505 YOUNGLOVE, B. A. AND DILLER, D. E.  
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- 506 YUSHKEVICH, N. F. AND TOROCHESHAIKOV, N. S.  
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- NITROGEN, VAPOR PRESSURE-LIQUID (70 TO 122 DEGREES K.).  
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507 ZIMMERMAN, G. O., FAIRBANK, H. A., STRONGIN, M., AND BERTMAN, B. T.  
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(ABSTR. IN BULL. AM. PHYS. SOC., VOL. 8, NO. 1, 91, JAN 1963)

HELIUM-3, VAPOR PRESSURE-SOLID (0.05 TO 0.25 DEGREES K.)  
PRESSURE BETWEEN 60 AND 100 ATM. AN UPPER LIMIT ONLY FOR THE SPECIFIC  
HEAT IN THIS REGION IS GIVEN.  
ONE TABULAR VALUE







